KRETOV, A.Ye.; BORODAVKO, N.D.

N,N-di (β-cyanoethyl)cyanamide and its reactions. Zhur. ob. khim. 33 no.5:1536-1539 My '63. (MIRA 16:6)

(Cyanamide)

KNUNYANTS, I.L.; ESPALYY, A.S.

Derivatives of thiazolidine. Zhur.ob.khim. 33 no.6:1878-1882 Je '63. (MIRA 16:7)

(Thiazolidine)

KRETOV, A.Ye.; ABRAZHANOVA, Ye.A.; ZLOTCHENKO, S.I.; KUKHAR', V.P.

Arene sulfamido ketones. Zhur.ob.khim. 33 no.7:2355-2357 Jl '63. (MIRA 16:8)

(Acetophenone) (Sulfamide)

KRETOV, A.Ye.; MOMSENKO, A.P.

Reactions of cyanamide with aliphatic acid anhydrides. Zhur.ob. khim. 33 no.10:3325-3328 O '63. (MIRA 16:11)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

KRETOV, A.Ye.; STERINA, Ye.Z.

Acenaphtholylacrylic acids and their derivatives. Zhur. prikl. khim. 36 no.5:1154-1157 My '63. (MIRA 16:8)

(Naphthaleneacrylic acid)

KOZOPOLYANSKIY, N.S.; KRETOV, A.Ye; OKHRAMOVICH, A.Ye.; ILYASH, I.I.

Use of fluorene-9,9-dipropionic acid for modification of polyester resins. Plast. massy no.11:14-15 '63. (MIRA 16:12)

KRETOV, A.Ye.; BESPALYY, A.S.

Derivatives of thiazolidine. Part 2. Zhur.ob.khim. 33 no.10: 3323-3325 O '63. (MIRA 16:11)

1. Dneprepetrovskiy khimiko-tekhnologicheskiy institut imeni F.E.Dzerzhinskogo.

OKHRAMOVICH, A.Ye.; KRETOV, A.Ye.

Preparation of polyesters by the condensation of fluorene-9, 9-dipropionic acid with 1,4-butylene glycol and 1,1-dihydroxyethyl ester. Zhur. prikl. khim. 36 no.12 2775-2779 D '63.

(MIRA 17:2)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

KRETOV, A. Ye.; TIKHONOVA, G.V.

Reactions of dicyandiamide with acetaldehyde and chloral.
Zhur. ob. khim. 34 no.7:2428-2430 Jl '64 (MIRA 17:8)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

KRETOV, A.Ye.; BESPALYY, A.S.

Derivatives of naphthothiazinidine. Zhur. ob. khim. 34 no. 3: 999-1001 Mr '64. (MIRA 17:6)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

KIOSOV, A. Ye.; BESSALYY, A. S.; POLITUN, N. N.

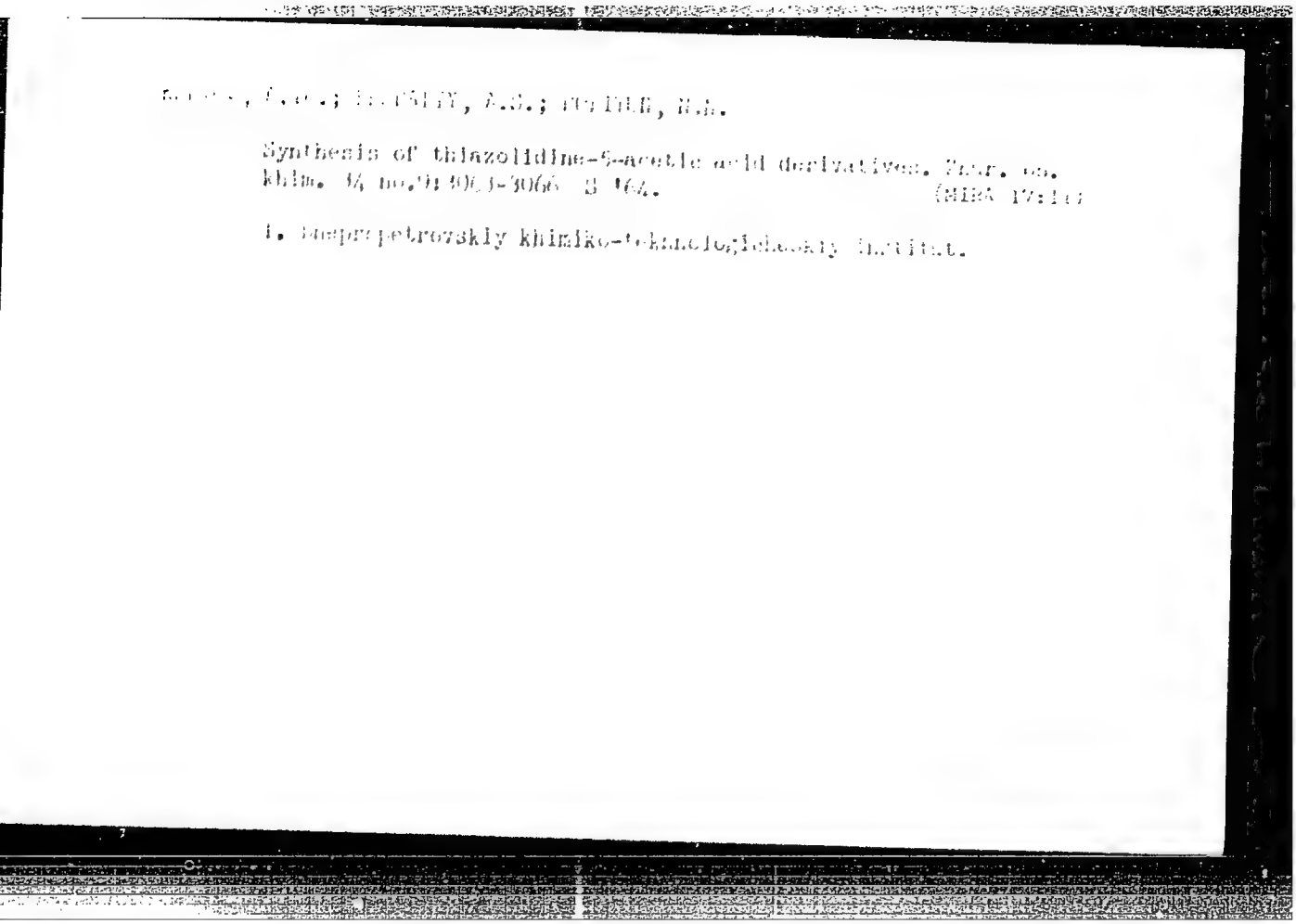
Thiophenedisulfonic acids and their derivatives. Zhur. ob. Khim. 34 no.6:2066-2068 Je '64. (MIRA 17:7)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

OKHRAMOVICH, A.Ye.; KRETOV, A.Ye.

Esters of fluorene-9,9-dipropionic acid. Zhur.prikl.khim. 37 no.1: 220-223 Ja '64. (MIRA 17:2)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.



[illegible], I.V.; [illegible], A.S.; [illegible], N.A.

Synthesis of thiazolidine-5-acetic acid derivatives. Zhur. org. khim. 1/4 no.11:1963-1966 N '64. (MIRA 17:12)

1. Ivanovo-Petrovskiy khimiko-tekhnologicheskiy institut.

KRETOV, A.Ye.; BESTALYY, A.S.

Thiazolidine derivatives. Part 3. Zhur. ob. khim. 34 no.10:3365-3367 O '64. (MIRA 17:11)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut imeni F.E. Dzerzhinskogo.

KRLTOV, A.Ye.; DAVYDOV, A.V.

New method of synthesizing guanamines containing fluoroalkyl radicals. Zhur. ob. khim. 35 no.4:746-748 Ap '65.
(MIRA 18:5)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

KRETOV, A.Ye.; OKHRAMOVICH, A.Ye.

Preparation of di- and tri-(β -cyanoethyl)-indene and their derivatives. Zhur.prikl.khim. 37 no.7:1617-1619 Jl '64.
(MIRA 18:4)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

[illegible], A.Ya. [illegible]; LAVRIOV, A.V.

Study of the reaction of fluorocarboxylic [illegible].
Zhur. ob. khim. 35 no.7:1156-1158 Jl '65. [illegible]

1. Ineprepetrovskiy khimiko-tekhnologicheskiy [illegible].

ARBUZOV, A.Ye. [deceased]; ABRAZHANOVA, Ye.A.; KUKHAR', V.P.

Oximes of alkoxy- and aroxycyclohexanones. Zhur. org. khim. 1 no.6: 1021-1022 Je '65. (MIRA 18:7)

ZLATIN, L.I.; KRETOV, B.K.

Automatic opening of the gates of coke ramps. Koks i khim. no.1: 41-45 '56. (MLRA 9:5)

1. Kemerovskiy koksokhimicheskiy zavod.
(Coke industry--Equipment and supplies)

Kretov, B.K.

AUTHOR: Zlatin, L.I. and Kretov, B.K. 68-12-22/25

TITLE: Mechanization of Loading Ammonium Sulphate in Box Cars (Kompleksnaya mekhanizatsiya pogruzki sul'fata ammoniya v krytyye vagony)

PERIODICAL: Koks i Khimiya, 1957, No.12, pp. 50 - 52 (USSR)

ABSTRACT: Mechanization of loading ammonium sulphate in covered wagons, organised on the Kemerov Coke Oven Works, is described and illustrated. There are 3 figures.

ASSOCIATION: Kemerovo Coke-chemical Plant (Kemerovskiy koksokhimicheskiy zavod)

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Card 1/1

ZLATIN, L.I.; KRETOV, B.K.; PANENKO, F.M.

Use of self-sealing doors in pitch coke ovens. Koks i khim. no.4:51 '60. (MIRA 13:6)

1. Kemerovskiy koksokhimicheskiy zavod.
(Kemerovo--Coke ovens)

KRETOV, G., inzh.

Strictly speaking, it is correct. But is it really? Grazhd. av. 20 no.3:10-11 Mr '63. (MIRA 16:4)

(Aeronautics, Commercial)

PAVLOVSKIY, V.Ya.; TSILEVICH, I.Z.; FRADIN, M.P.; MAKSIMOVICH, P.D.; SHAPIRO, Yu.A.; GRIGOR'YEVA, M.G.; RAPNOPINA, Ye.T.; KEPPOVA, G.V.

Rolling mill rolls of hypereutectoid chromium-vanadium 90 KhF steel. Metallurg 10 no.7:40 Jl '65. (MIRA 18:7)

1. Metallurgicheskiy zavod "Azovstal'".

KRETOV, [illegible]

[illegible] orchard [illegible] in Switzerland. [illegible], no. [illegible].
[illegible] (MIRA [illegible])

(Switzerland--D[illegible])

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420(

KRETOV, I.T.

Drying brewer's waste. Izv. vys. ucheb. zav.; pishch. tekh. no.4:124-127 '61. (MIRA 14:8)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti, kafedra oborudovaniya pishchevykh predpriyatiy.
(Brewing industry--By-products)

KRETOV, I.T.

Determining the coefficient of moisture transfer in brewing grains. Izv.vys.ucheb.zav.; pishch.tekh. 2:138-143 '62.
(MIRA 15:5)

1. Voronezhskiy tekhnologicheskiy institut, kafedra oborudovaniya pishchevykh predpriyatiy.
(Brewing industry) (Grain--Drying)

AP(1) SOV/47-59-3-24/53

AUTHOR: Kretov N.A.

TITLE: The Regeneration of Permanent Magnets

PERIODICAL: Fizika v shkole, 1959, Nr 3, p 75 (USSR)

ABSTRACT: The author describes a method to regenerate weak permanent magnets. The magnet is placed within a 12-volt coil taken from a demountable school transformer. The poles of the magnet are closed with an iron armature. For a linear magnet, the magnetic circuit can be established with the core parts of the transformer. The coil is switched to a 127 or 220 volt alternating current circuit through a copper conductor of 0.15 to 0.2 mm. Upon contact, the thin conductor burns out, having time to let current pass in one direction only. The polarity of the regenerated magnets can be checked with a magnetic needle.

Card 1/2

SOV/47-59-3-24/53

The Regeneration of Permanent Magnets

Bereznyakovskaya srednyaya shkola Usmanskogo rayona Lipetskoy obl. (Bereznyakovskaya Secondary School of the Usman' Rayon, Lipetsk Oblast)

Card 2/2

RUKHLYADEVA, A.P.; POLYGALINA, G.V.; BAULINA, E.A.; KRETOV, V.F.

Automatic method for determining the concentration of grain and potato mash. Ferm. i spirt. prom. 30 no.3:25-29 '64.
(MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fermentnoy i spirtovoy promyshlennosti (for Rukhlyadeva, Polygalina).
2. Vsesoyuznyy nauchno-issledovatel'skiy eksperimental'no-konstruktorskiy institut prodovol'stvennogo mashinostroyeniya (for Baulina, Kretov).

ODINOKOV, S.D., kand.tekhn.nauk; SHABALINA, V.I., mladshiy nauchnyy sotrudnik; SIROTKINA, O.V., starshiy tekhnik; KRETOVA, L.V., starshiy tekhnik; VDOVENKO, Z.I., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Album of charts, designs of equipment, tools, and devices for erecting asbestos cement building roofs] Al'bom tekhnologicheskikh skhem, chertezhei oborudovaniia, instrumentov i prisposoblenii dlia ustroistva asbestotsementnykh krovel' zdanii. Moskva, Gos.izd-vo po stroit., arkhit. i stroit.materialam, 1960. 42 p. (MIRA 14:3)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Laboratoriya krovel'nykh i otdelochnykh rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Odinokov, Shabalina, Sirotkina, Krotova).
(Asbestos cement) (Roofing)

MOSKOV, S.K., kand.tekhn.nauk; ODINOKOV, S.D., kand.tekhn.nauk; SIROTKINA, O.V., starshiy tekhnik; KRETOVA, L.V., starshiy tekhnik. Prinimala uchastiye SHABALINA, V.I., mladshiy nauchnyy sotrudnik. SKVORTSOVA, I.P., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Album of technological schemes and drawings of the equipment, instruments, and devices to be used in covering roofs with rolled materials] Al'bom tekhnologicheskikh skhem i chertezhei oborudovaniia, instrumentov i prisposoblenii dlia ustroistva krovel' iz rulonnykh materialov. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 48 p. (MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
(Roofing--Equipment and supplies)

KRETOV, L.Ye.; MOMSENKO, A.P.

Reactions of cyanamide with aliphatic acid anhydrides. Part 1.
Zhur.ob.khim. 33 no.2:397-399 F '63. (MIRA 16:2)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Cyanamide) (Acids, Fatty) (Anhydrides)

SULIMOV, Filaret Ivanovich; GORBACHEV, Sergey Mikhaylovich; KRETOV, Pavel Yevseyevich; LIOGEN'KIY, German L'vovich; VELISHCHANSKIY, V.M., red.; YELCHINA, L.A., red.izd-va; KAZANSKAYA, L.I., tekhn.red.

[Reorganization problems and forest management in Vologda Province] Voprosy reorganizatsii i lesnoe khoziaistvo Vologodskoi oblasti. Moskva, Goslesbumizdat, 1963. 74 p. (MIRA 17:3)

KRETOV, V.P., inzh.; KIRPICHNIKOV, Yu.A., inzh.

Automatic lighting control. Prom. energ. 19 no.11:22-23 N '64.
(MIR: 18:1)

KRETOVA, N. F.

112-6-11867

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr[illegible] p. 13 (USSR)

AUTHOR: Voronkov, G.N., Zvyagil'skiy, A.A., and Kretova, N.F.

TITLE: High-Voltage Porcelain of Better Electromechanical Properties from Boron-Containing Raw Material (Vysokovol'tnyy farfor s povyshennymi elektromekhanicheskimi svoystvami na osnove borosoderzhashchego syr'ya)

PERIODICAL: Tr. Gos. issled. elektrokeram. in-ta, 1956, Nr 1, pp. 5-16

ABSTRACT: As it was necessary to improve the mechanical and electrical characteristics of porcelain a new type of porcelain was developed in GIEKI on the basis of a boron-containing (asharit) ore, alumina, clay materials and a small amount of alkali-earth compounds. No quartz or feldspar was introduced. The use of ascharite ore ($2MgO \cdot B_2O_3 \cdot H_2O$) as a fusing agent, instead of $CaCO_3$ or $BaCO_3$, and also the introduction of commercial Al_2O_3 with an increased content of kaolin insured the close-packed structure of porcelain, in which the crystals of mullite formed a felt-like lattice and were uniformly distributed in the vitreous phase. There is a negligible amount of free sections of glass in the ascharite porcelain, but there are finely grained clusters of α-alumina. As the ascharite porcelain has a lower coefficient of linear expansion (3.9×10^{-6}) than the ordinary feldspar porcelain (6×10^{-6}), two new glazes (white and brown) were developed having less alkali oxide content. Due to

Card 1/2

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr[illegible], p.13 (USSR)

the more uniform structure and other factors the ascharite porcelain has almost double mechanical strength as compared to the feldspar porcelain. Nonalkaline vitreous phase insures higher values of volume electrical resistivity and electric strength, and lower values of the dielectric loss angle. Preparatory procedures and the manufacture of insulators can follow regular methods of the electrical porcelain manufacture. The only additional operation is the introduction of sinter into the mass of ascharite porcelain. Optimum firing temperature 1310 -1330°C. Ascharite and feldspar insulators can be fired jointly, but the sintering interval of the ascharite units is shorterthan that of the ordinary electrical porcelain (30-40° against 60-80°C). Thermographic and chemical investigations of the ascharite ore have shown that for electrical porcelain purposes it should have at least 22% B_2O_3 and 23% MgO. The density of ascharite ore should be at least 2.67 g/cm^3, the firing loss should not be over 18%. Bibliography: 6 titles.

N.V.N.

Dissertation: "Investigation of the Resistance to Rolling of a Tractor with Pneumatic Tir[illegible]
Cand Tech Sci, All-Union Sci Res Inst of Mechanization of Agriculture, Moscow, 1953.
(Referativnyy Zhurnal--Mekhanika, Moscow, Apr 54)

SO: SUM 243, 19 Oct 1954

KRETOVA, O.

KRETOVA, O. "The Kamennaya Steppe. In the natural conservation", (Outline), Lit. Voronezh, 1946, No. 3, p. 199-200.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No.7 1949).

KRETOVA, O.

Kretova, O. "The rocky steppe," [On the work of the Farming Institute of the Central Chernozem Zone imeni Dokuchayev], Oktyabr', 1949, No. 3, p. 102-34

SO: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

KRETOVA, O., pisatel'; BULAVIN, M., pisatel'; GLUKHOV, A., kand.ekon.nauk; MITROSHIN, S., kand.istoricheskikh nauk; PLOTNIKOV, A., vrach; MOREV, M., zhurnalist; PHUDKOVSKIY, P.N., red.; VOROTNIKOVA, R.V., red.; SKRADZSKAYA, P.G., tekhn.red.

[From impoverishment to prosperity; past and present conditions of the villages of Novo-Zhivotinnoye and Mokhovatka, Berezov District, Voronezh Province] Ot oskudeniia k protsvetaniiu; proshloe i nastoiashchee sel Novo-Zhivotinnogo i Mokhovatki Berezovskogo raiona Voronezhskoi oblasti. Voronezhskoe knizhnoe izd-vo, 1958. 77 p. (MIRA 12:3)

1. Zaveduyushchiy Novo-Zhivotinnovskoy uchastkovoy bol'nitsey (for Plotnikov).

(Voronezh Province--Villages)

KRETOVA, Ol'ga Kapitonovna; PRUDKOVSKIY, P.N., red.; SKRADZSKAYA, P.G., tekhn.red.

[We who live near Voronezh; a sketch] Pod Voronezhem u nas; ocherk. Voronezh, Voronezhskoe knizhnoe izd-vo, 1959. 27 p. (MIRA 14:1)

(Manukovskii, Nikolai Fedorovich)

KRETOVA, Ol'ga Kapitonovna; DROKHANOVA, Ye.N., red.; YELAGIN, A.S., tekhn. red.

[Nikolai Manukovskii's "universities."]Universitety Nikolaia Manukovskogo. Moskva, Izd-vo "Sovetskaia Rossiia, 1961. 124 p. (MIRA 15:3)

(Manukovskii, Nikolai Fedorovich)

KRETOVA, T.S.; SMIRNOVA, N.P., redaktor; MAKHOVA, N.N., tekhnicheskiy redaktor.

[The teacher's preparation for geography lessons in class 5] Podgotovka uchitelia k urokam geografii v V klasse. Moskva, Gos.uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1954. 47 p.
(Physical geography--Study and teaching) (MIRA 8:5)

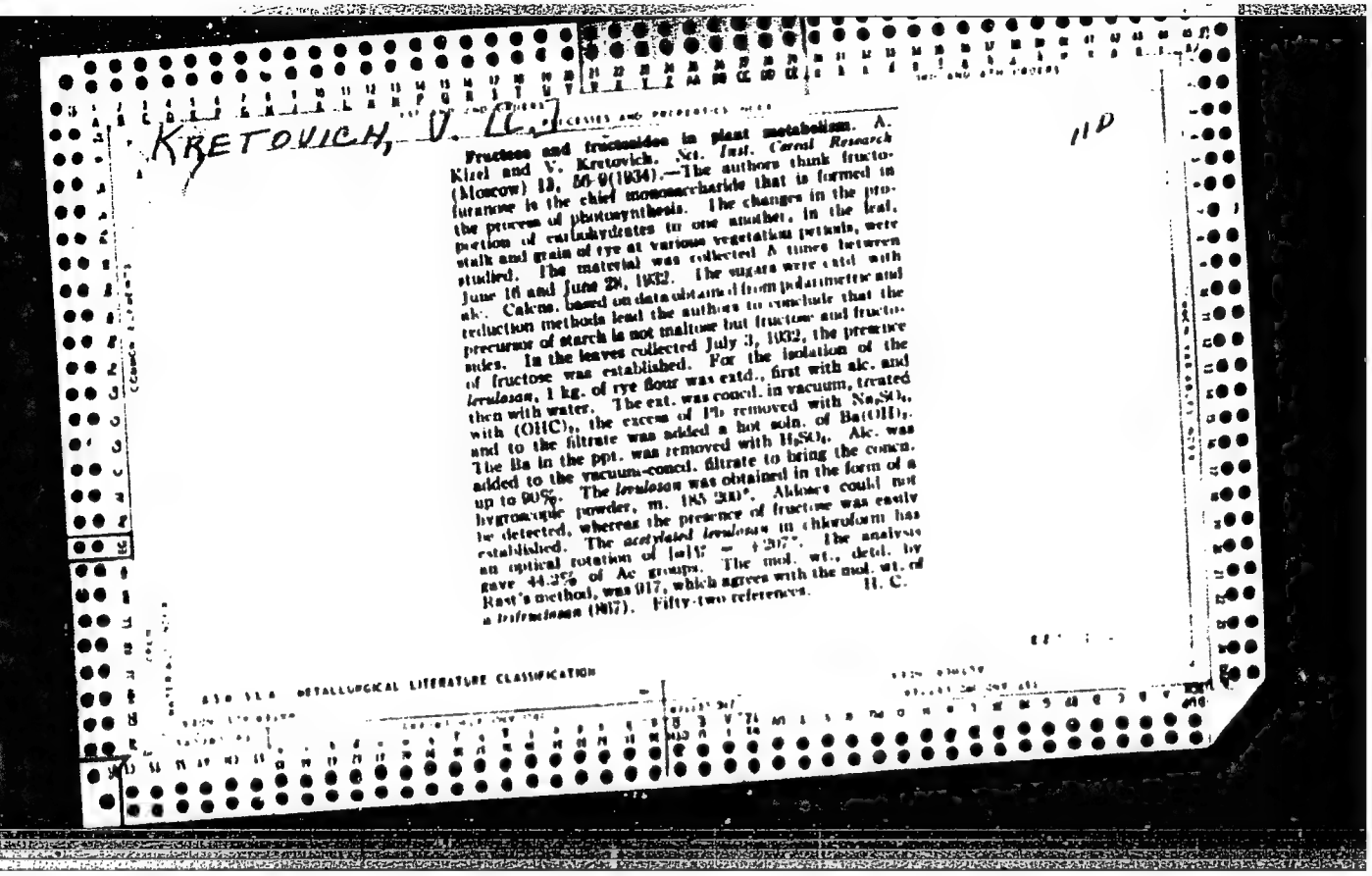
1. KRETOVA, V. S.

2. SSSR (600)

4. Geese

7. My work practice.
Ptitsevodstvo No. 6, 1952

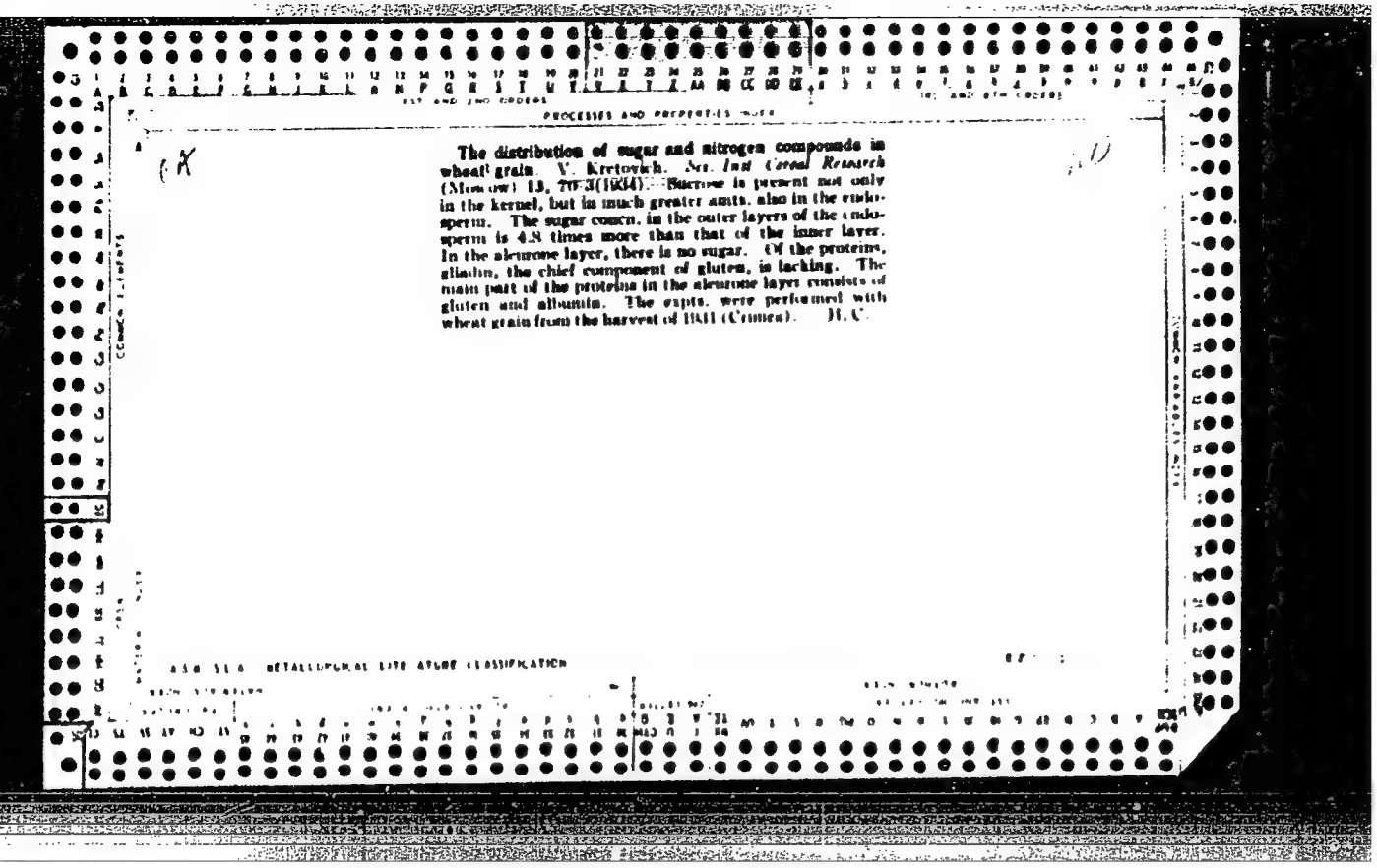
9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.



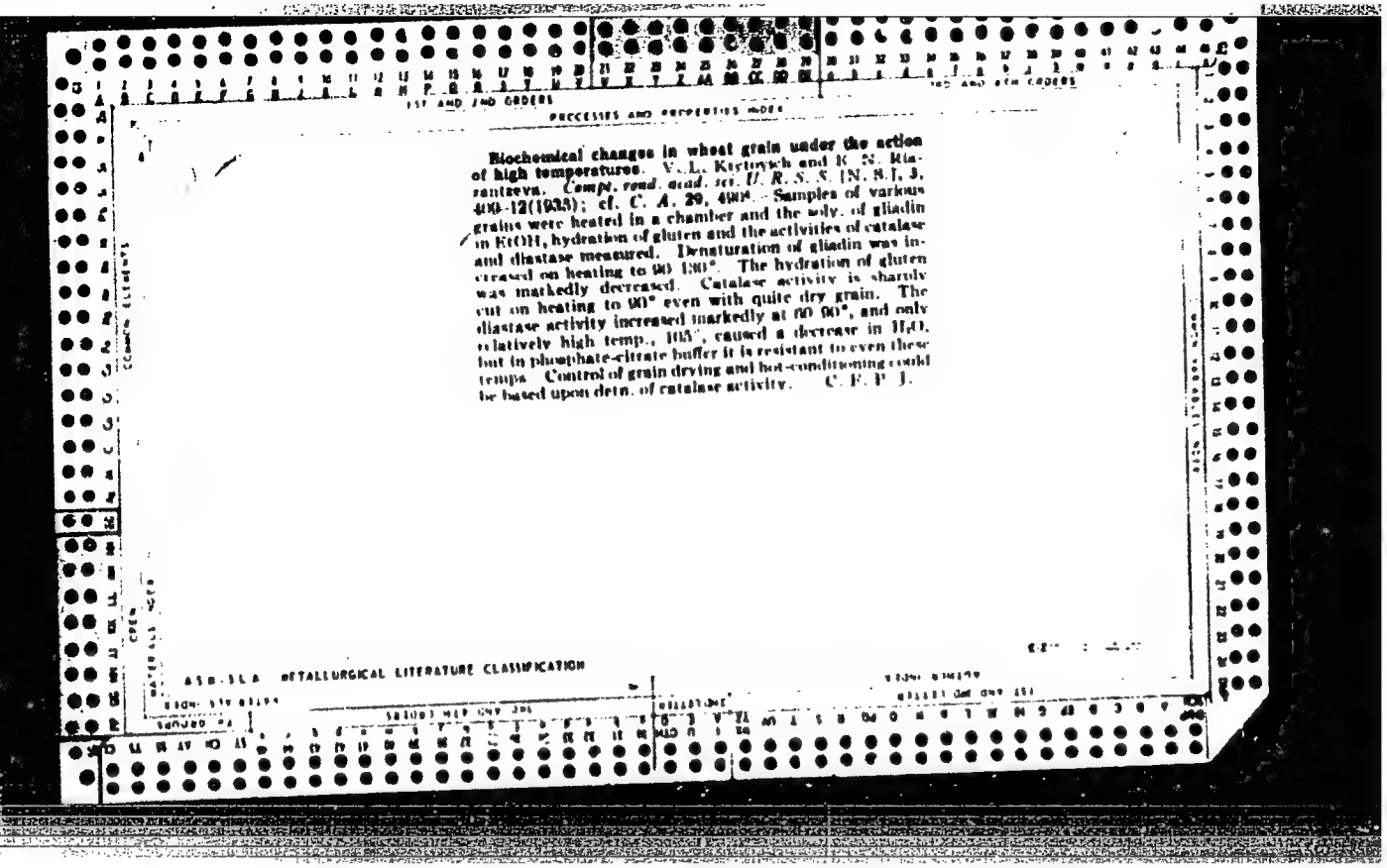
KRETOVICH, V. L.

Fructose and fructosides in plant metabolism. A. Kizel and V. Kretovich. *Sci. Inst. Cereal Research (Moscow)* 13, 55-9(1934).—The authors think fructofuranose is the chief monosaccharide that is formed in the process of photosynthesis. The changes in the proportion of carbohydrates to one another, in the leaf, stalk and grain of rye at various vegetation periods, were studied. The material was collected 4 times between June 16 and June 28, 1932. The sugars were estd. with alk. Cu(OH)$_2$, based on data obtained from polarimetric and reduction methods lead the authors to conclude that the precursor of starch is not maltose but fructose and fructosides. In the leaves collected July 3, 1932, the presence of fructose was established. For the isolation of the *levulosan*, 1 kg. of rye flour was extd., first with alc. and then with water. The ext. was concd. in vacuum, treated with (OHC)$_2$, the excess of Pb removed with Na_2SO_4, and to the filtrate was added a hot soln. of $Ba(OH)_2$. The Ba in the ppt. was removed with H_2SO_4. Alc. was added to the vacuum-concd. filtrate to bring the concn. up to 90%. The *levulosan* was obtained in the form of a hygroscopic powder, m. 185-200°. Authors could not be detected, whereas the presence of fructose was easily established. The *acetylated levulosan* in chloroform has an optical rotation of $[\alpha]_D^{18} = +20.7°$. The analysis gave 44.2% of Ac groups. The mol. wt., detd. by Rast's method, was 917, which agrees with the mol. wt. of a *hexosan* (987). Fifty-two references. H. C.

USSR METALLURGICAL LITERATURE CLASSIFICATION



The distribution of sugar and nitrogen compounds in wheat grain. V. Kretovich. *Sci. Inst. Cereal Research* (Moscow) 13, 207-3(1934).—Sucrose is present not only in the kernel, but in much greater amts. also in the endosperm. The sugar concn. in the outer layers of the endosperm is 4.8 times more than that of the inner layer. In the aleurone layer, there is no sugar. Of the proteins, gliadin, the chief component of gluten, is lacking. The main part of the proteins in the aleurone layer consists of gluten and albumin. The expts. were performed with wheat grain from the harvest of 1931 (Crimea). H. C.



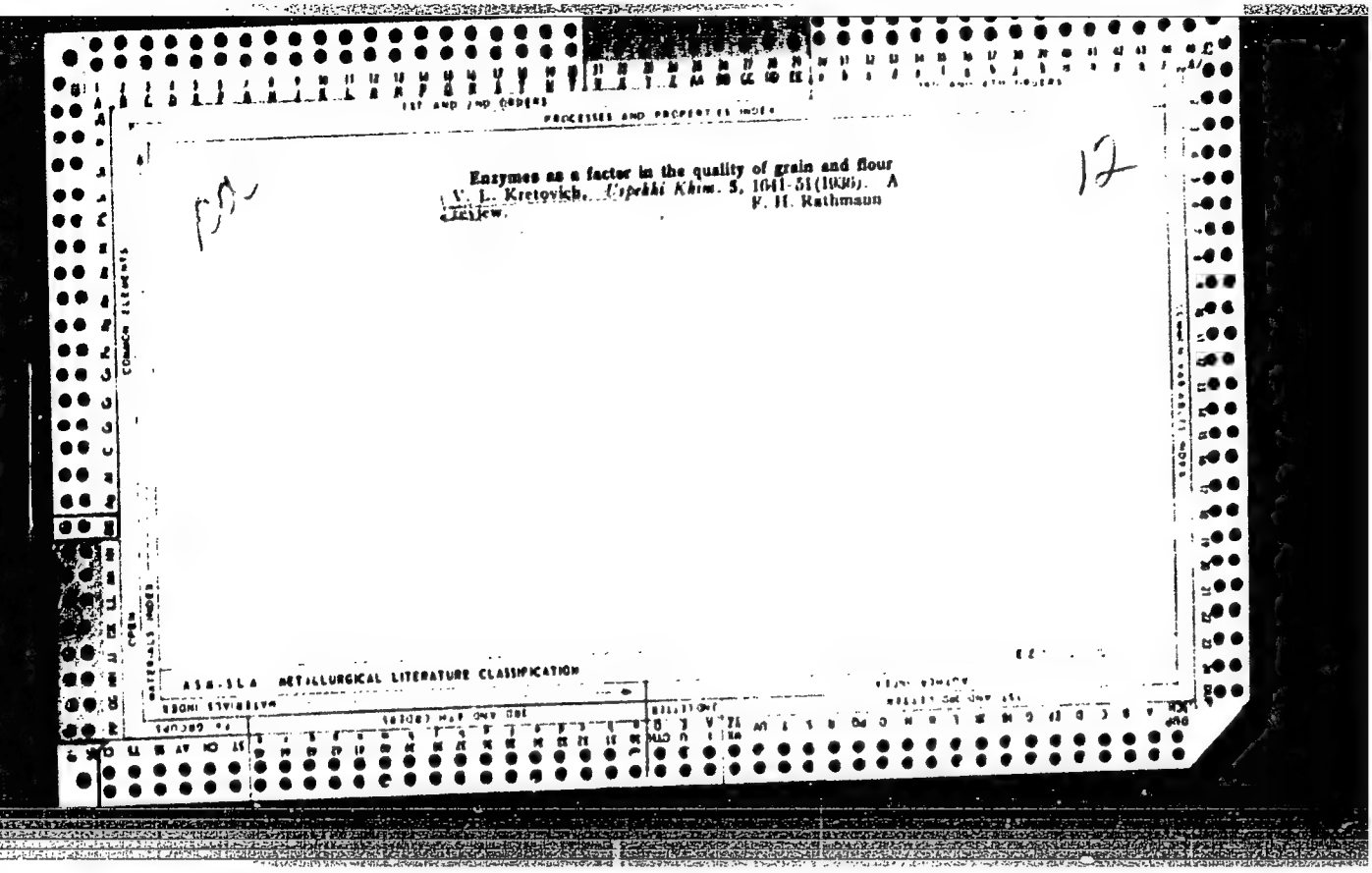
Biochemical changes in wheat grain under the action of high temperatures. V. L. Kirilych and K. S. Riazantzeva. *Compt. rend. acad. sci. U. R. S. S.* [N. S.], 3, 409-12(1935); cf. *C. A.*, 29, 4808.—Samples of various grains were heated in a chamber and the solv. of gliadin in EtOH, hydration of gluten and the activities of catalase and diastase measured. Denaturation of gliadin was increased on heating to 90-130°. The hydration of gluten was markedly decreased. Catalase activity is sharply cut on heating to 90° even with quite dry grain. The diastase activity increased markedly at 60-90°, and only relatively high temp., 105°, caused a decrease in H_2O, but in phosphate-citrate buffer it is resistant to even these temps. Control of grain drying and hot-conditioning could be based upon detn. of catalase activity. C. F. P. J.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

The relation between gliadin and glutenin in the wheat grain. V. L. Kretovich and E. Ryazantsev. *Trudy Lab. Izucheniyu Belka Belkovogo Obmena Organisme* **8**, 82-4(1935); *Chem. Zentr.* **1938**, II, 3175; cf. *C. A.* **30**, 1445[9].—The amt. of alc.-sol. N contained in the flour varies with the thickness of the peripheral layers of the grain. Therefore, in testing the theory regarding the relation between the ratio of gliadin to glutenin on the one hand and the technological properties of the grain on the other, it is necessary that conditions and ratios in the bran be considered and not those in the flour, since only the content in the bran and not the total N in the grain is the chief factor detg. the plasticity and taste of pastries and bread. It was also shown that alc. solns. of gliadin very readily penetrate the cell walls of the intact grain, so that the degree of milling of the flour is without influence on the ratio of alc.-sol. N to total N. W. A. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Enzymes as a factor in the quality of grain and flour
V. L. Kretovich. *Uspekhi Khim.* 5, 1041-51(1936). A
Review. V. H. Rathmann

12

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

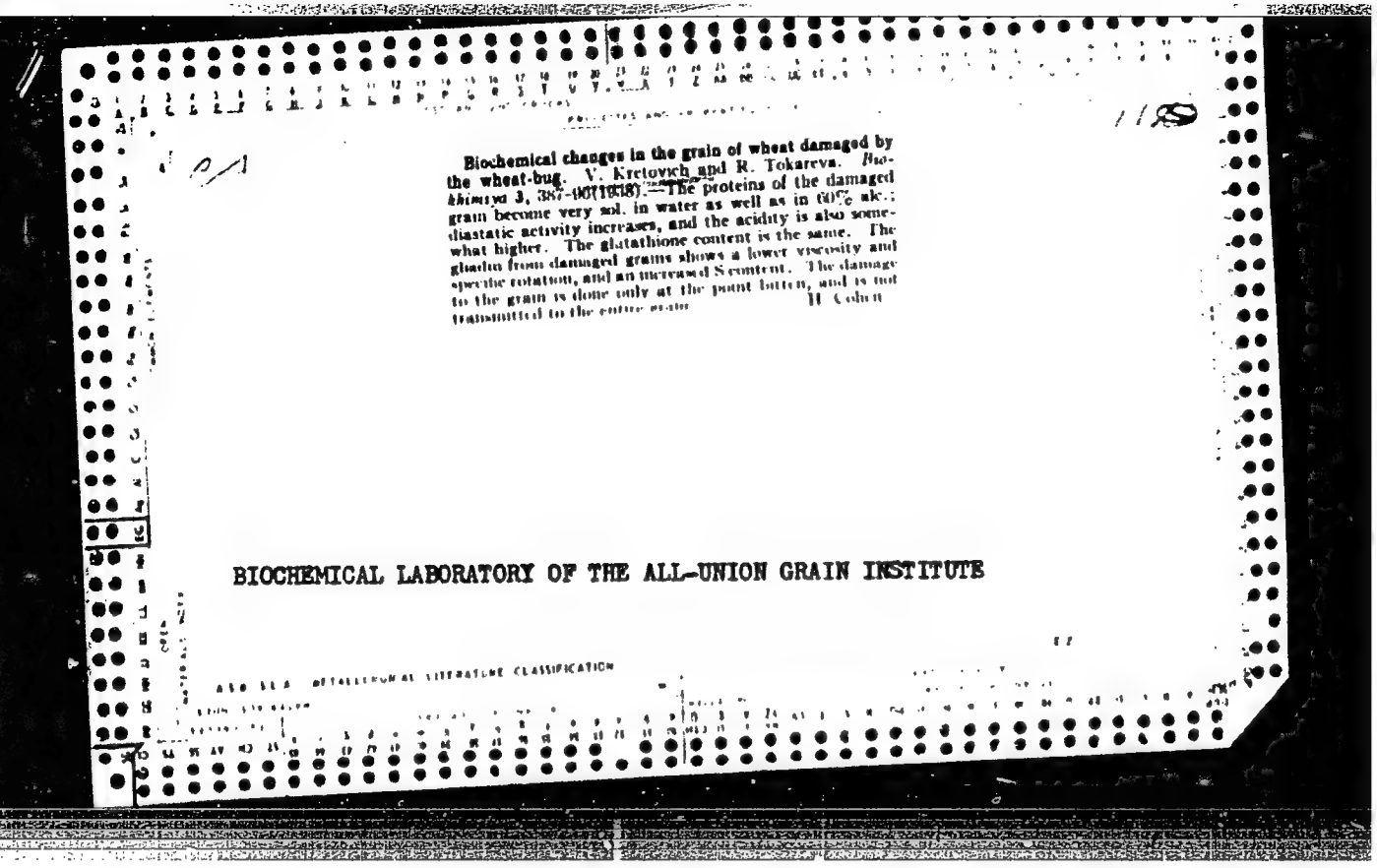
Ca

11A

Phosphorylation of albuminous substances A. Kiesel and V. Mitskevich. *Trudy Lab. Biokhemii Belka Rastenii Gosudarstvennoi Organizatsii Akad. Sel'sko-Khoz. Nauk im. Lenina* 9, 70-82(1936); *Chem. Zentr.* 1938, II, 2880.—The phosphorylation of deaminated *gliadin* and *edestin* with $POCl_3$ in pyridine was studied. The products so obtained did not differ from those obtained by phosphorylation of untreated gliadin and edestin. From this it follows that the phosphoric acid combines with the protein at OH groups. With the use of this method it is therefore possible to det. whether free OH groups are present in a protein and whether hydroxyamino acids are a part of the structure of the protein mol.

M. G. Moore

METALLURGICAL LITERATURE CLASSIFICATION



Biochemical changes in the grain of wheat damaged by the wheat-bug. V. Kretovich and R. Tokareva. *Biokhimiya* 3, 387-90(1938).—The proteins of the damaged grain become very sol. in water as well as in 60% alc.; diastatic activity increases, and the acidity is also somewhat higher. The glutathione content is the same. The gliadin from damaged grains shows a lower viscosity and specific rotation, and an increased S content. The damage to the grain is done only at the point bitten, and is not transmitted to the entire grain. H Colin

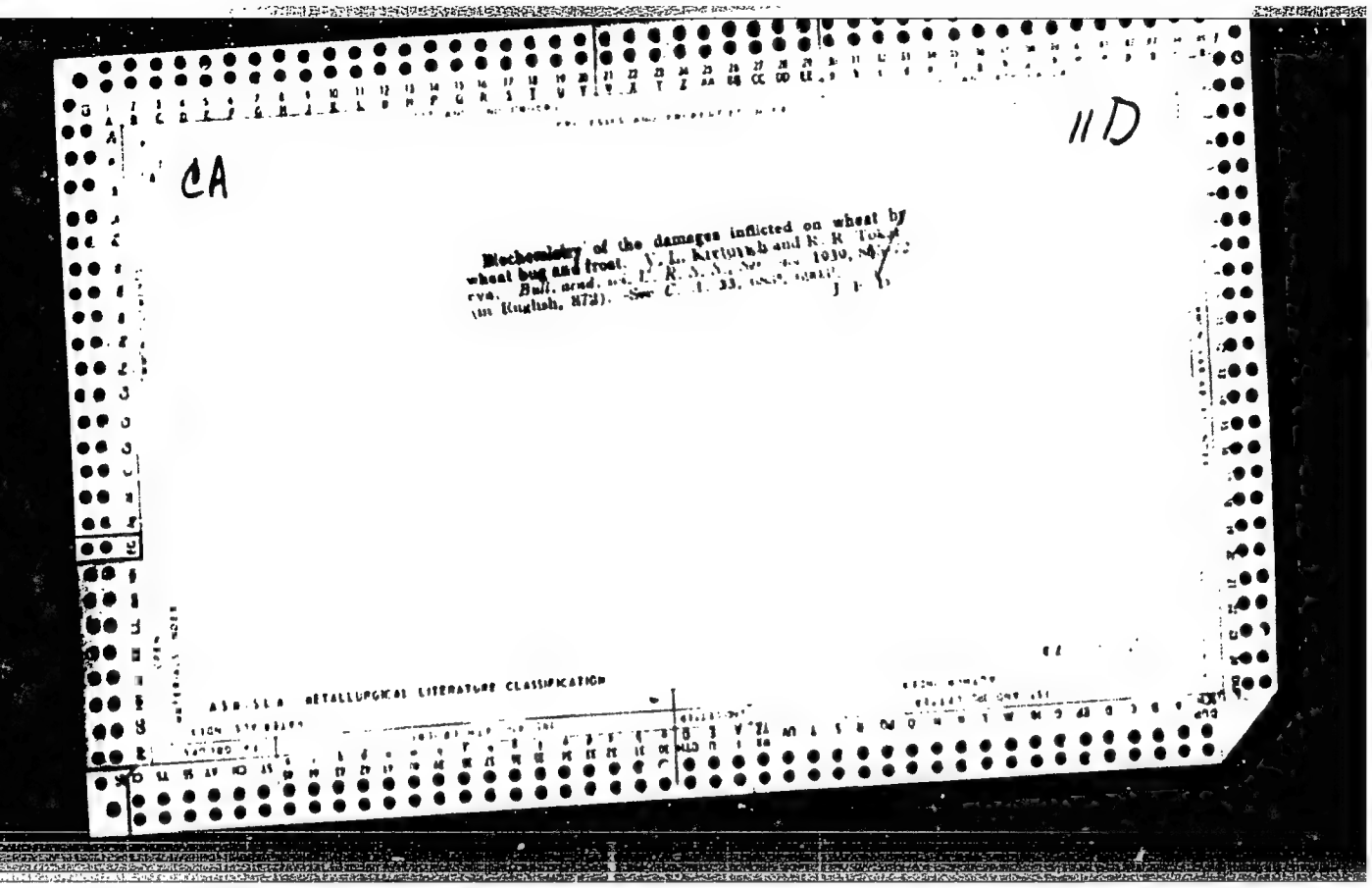
BIOCHEMICAL LABORATORY OF THE ALL-UNION GRAIN INSTITUTE

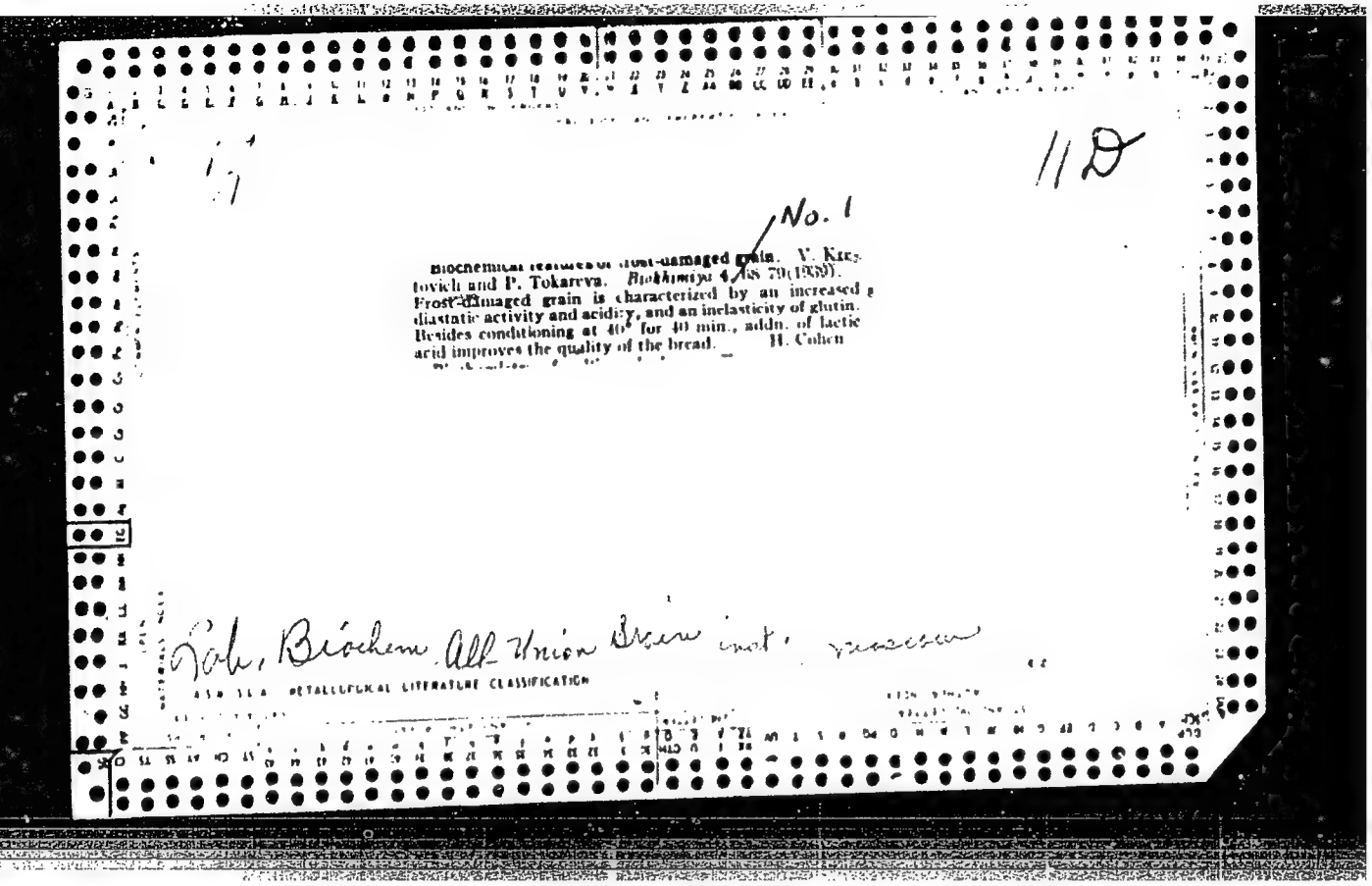
AID DLA METALLURGICAL LITERATURE CLASSIFICATION

KRETOVICH, V. L.

"The Biochemistry of Grain in Storage" A. I. Smirnov, and V. L. Kretovich, Sbornik Akad Nauk SSSR, Presidentu Adad Nauk SSSR Komarovu 1939, pp 720-5; Khim Referat Zhur, 1940, No 12, pp 31 (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949





No. 1

110

Biochemical features of frost-damaged grain. V. Kretovich and P. Tokareva. *Biokhimiya* 4, 78-79(1939). Frost-damaged grain is characterized by an increased diastatic activity and acidity, and an inelasticity of glutin. Besides conditioning at 40° for 40 min., addn. of lactic acid improves the quality of the bread. H. Cohen

Lab. Biochem. All Union Grain inst. moscow

ASTIA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

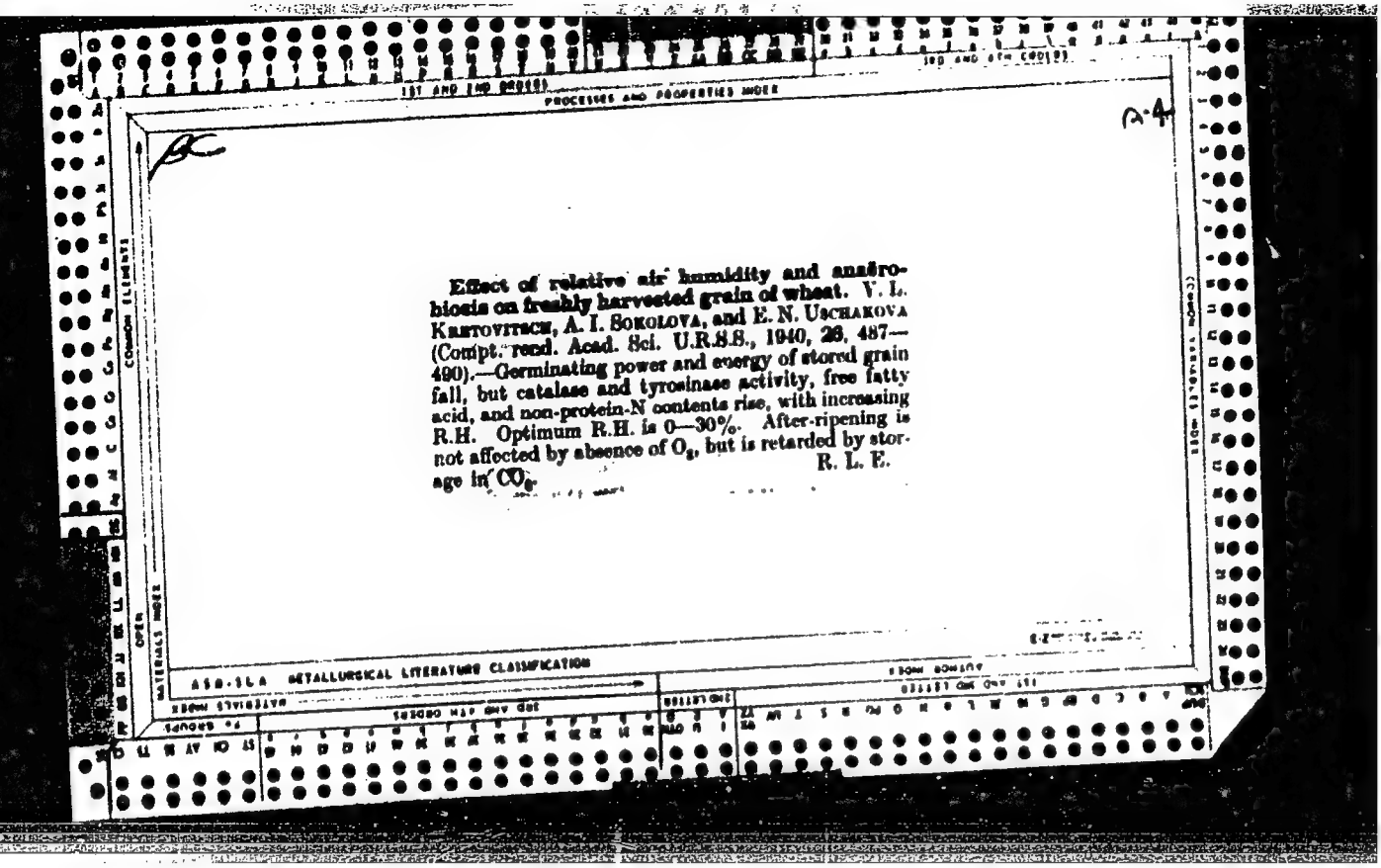
12

Biochemical changes in the grains of wheat damaged by the wheat bug. II. V. L. Kretovich and P. P. Tokareva. *Biokhimiya* 4, 636-47 (1939); cf. C. A. 33, 683[9]. The addn. of dry enzyme prepns. from the damaged grains to normal wheat flour destroys the gluten. These enzymes are not activated by cysteine nor inhibited by bromates. Normal gluten was obtained from a wheat sample contg. 32% damaged grain by steaming for 1.5-3 min., or by heating (after the moisture content had been raised 20%) 30-45 min., rapidly raising the temp. from 50° to 80°.

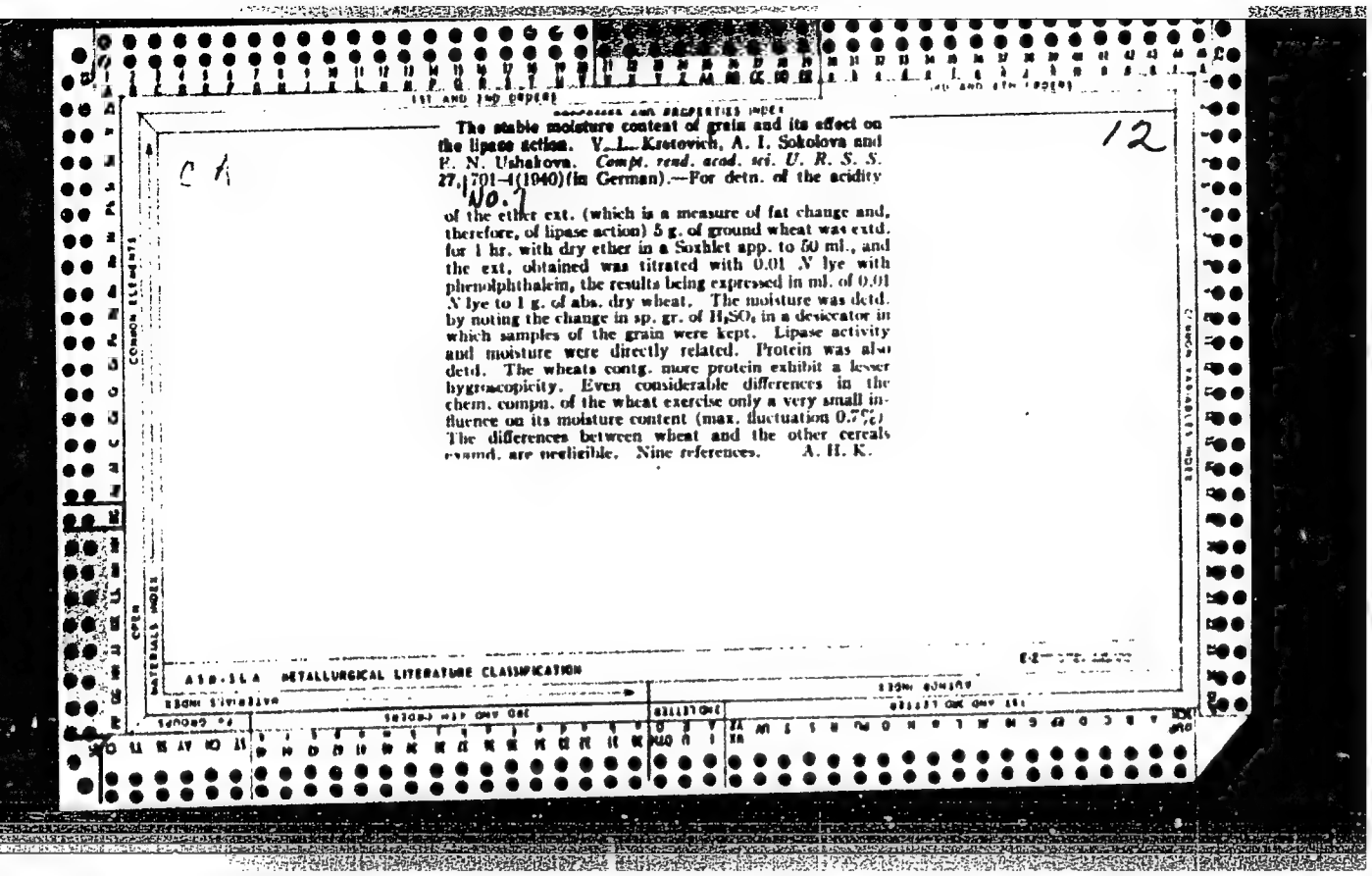
H. Priestley

Biochemical Lab., All-Union Inst. of Grain, Moscow

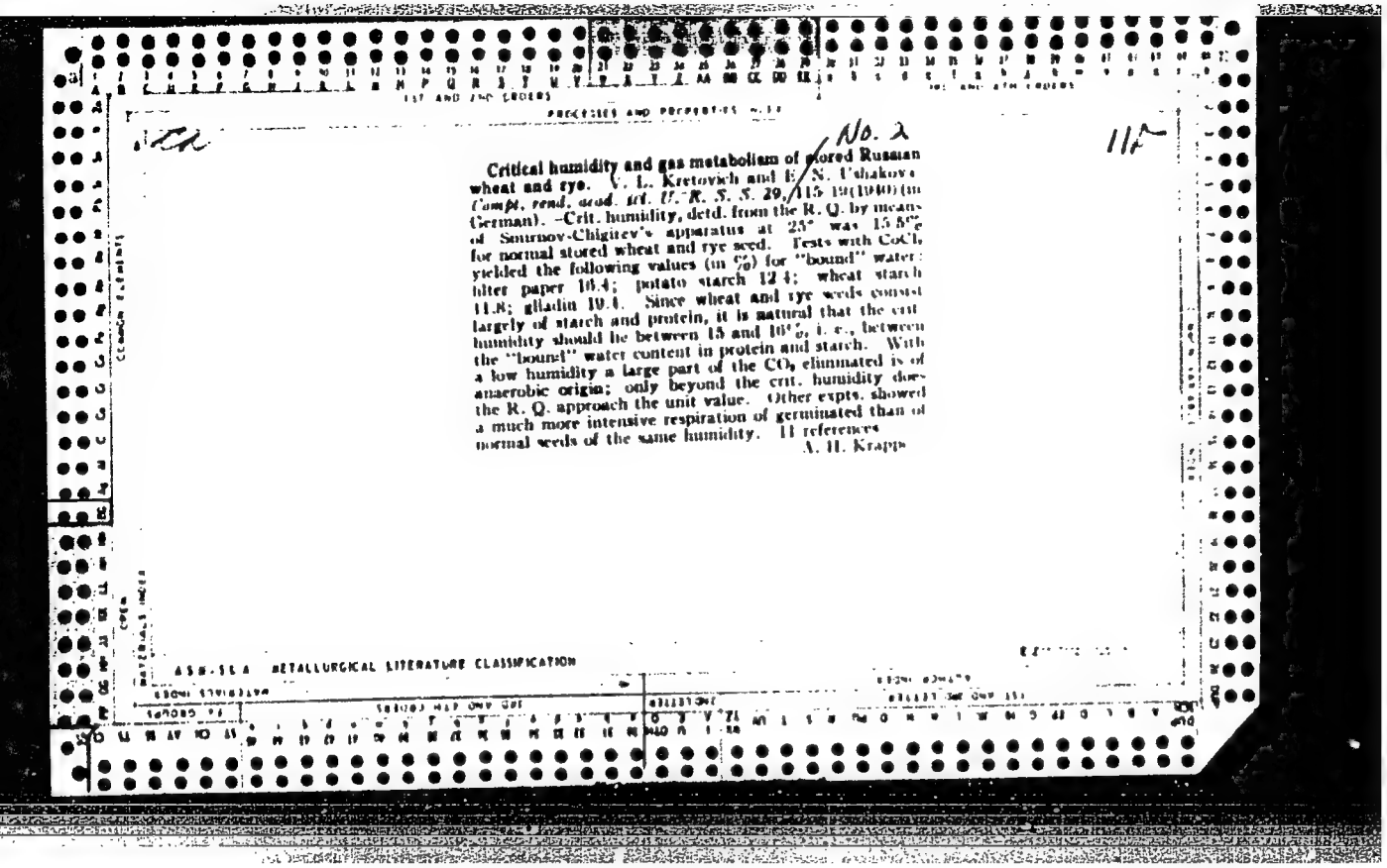
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Effect of relative air humidity and anaërobiosis on freshly harvested grain of wheat. V. L. KRETOVITSCH, A. I. SOKOLOVA, and E. N. USCHAKOVA (Compt. rend. Acad. Sci. U.R.S.S., 1940, 26, 487—490).—Germinating power and energy of stored grain fall, but catalase and tyrosinase activity, free fatty acid, and non-protein-N contents rise, with increasing R.H. Optimum R.H. is 0—30%. After-ripening is not affected by absence of O_2, but is retarded by storage in CO_2. R. L. E.



The stable moisture content of grain and its effect on the lipase action. V. L. Kretovich, A. I. Sokolova and E. N. Ushakova. *Compt. rend. acad. sci. U. R. S. S.* 27, 701–4 (1940) (in German).—For detn. of the acidity of the ether ext. (which is a measure of fat change and, therefore, of lipase action) 5 g. of ground wheat was extd. for 1 hr. with dry ether in a Soxhlet app. to 50 ml., and the ext. obtained was titrated with 0.01 *N* lye with phenolphthalein, the results being expressed in ml. of 0.01 *N* lye to 1 g. of abs. dry wheat. The moisture was detd. by noting the change in sp. gr. of H_2SO_4 in a desiccator in which samples of the grain were kept. Lipase activity and moisture were directly related. Protein was also detd. The wheats contg. more protein exhibit a lesser hygroscopicity. Even considerable differences in the chem. compn. of the wheat exercise only a very small influence on its moisture content (max. fluctuation 0.7%). The differences between wheat and the other cereals examd. are negligible. Nine references. A. H. K.



No. 2

Critical humidity and gas metabolism of stored Russian wheat and rye. V. L. Kretovich and E. N. Ushakova. *Compt. rend. acad. sci. U. R. S. S.* 29, 115-19 (1940) (in German). —Crit. humidity, detd. from the R. Q. by means of Smirnov-Chigirev's apparatus at 25° was 15.5% for normal stored wheat and rye seed. Tests with $CoCl_2$ yielded the following values (in %) for "bound" water: filter paper 16.4; potato starch 12.4; wheat starch 11.8; gliadin 10.4. Since wheat and rye seeds consist largely of starch and protein, it is natural that the crit. humidity should lie between 15 and 10%, i. e., between the "bound" water content in protein and starch. With a low humidity a large part of the CO_2 eliminated is of anaerobic origin; only beyond the crit. humidity does the R. Q. approach the unit value. Other expts. showed a much more intensive respiration of germinated than of normal seeds of the same humidity. 11 references.

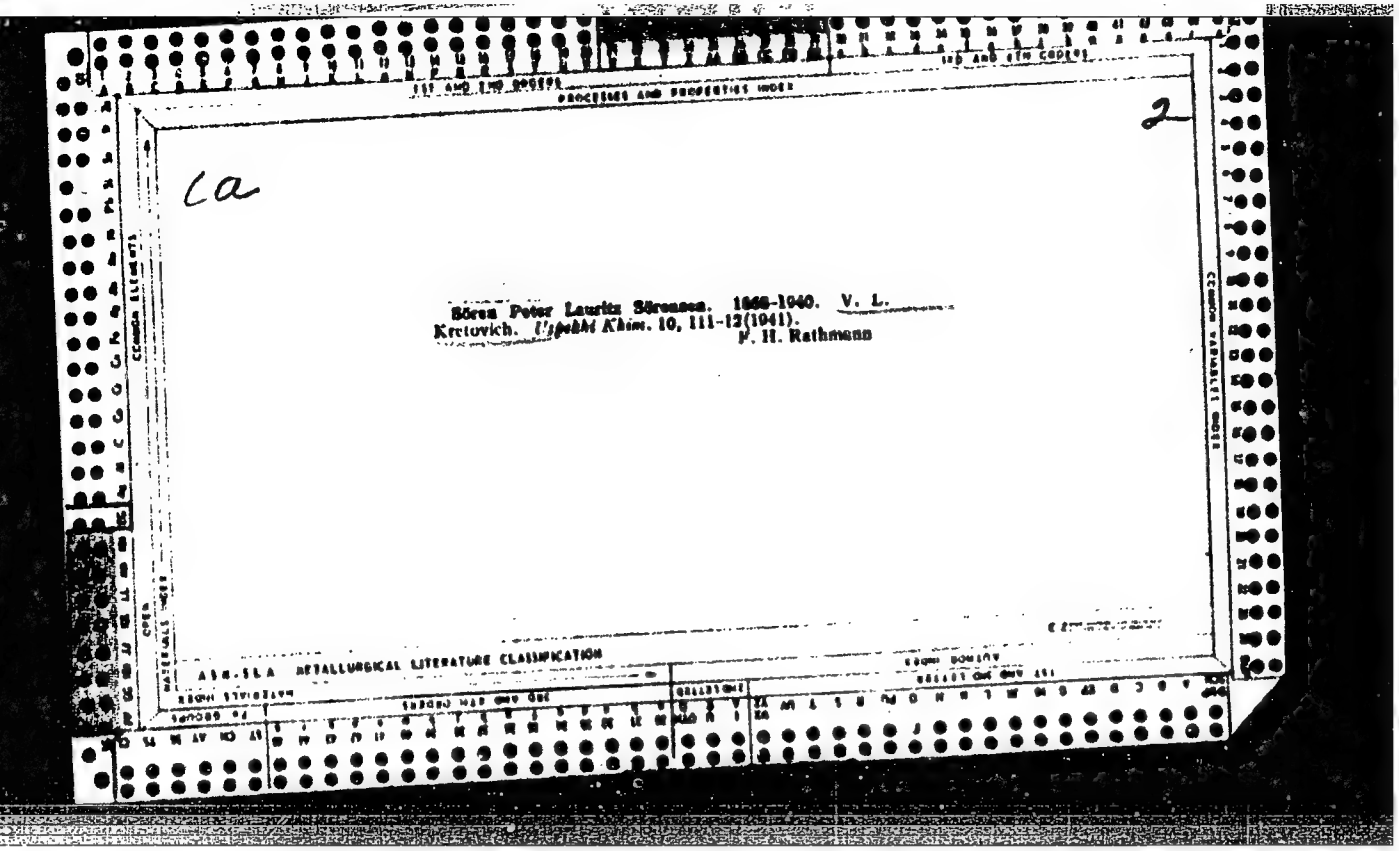
A. H. Krapp

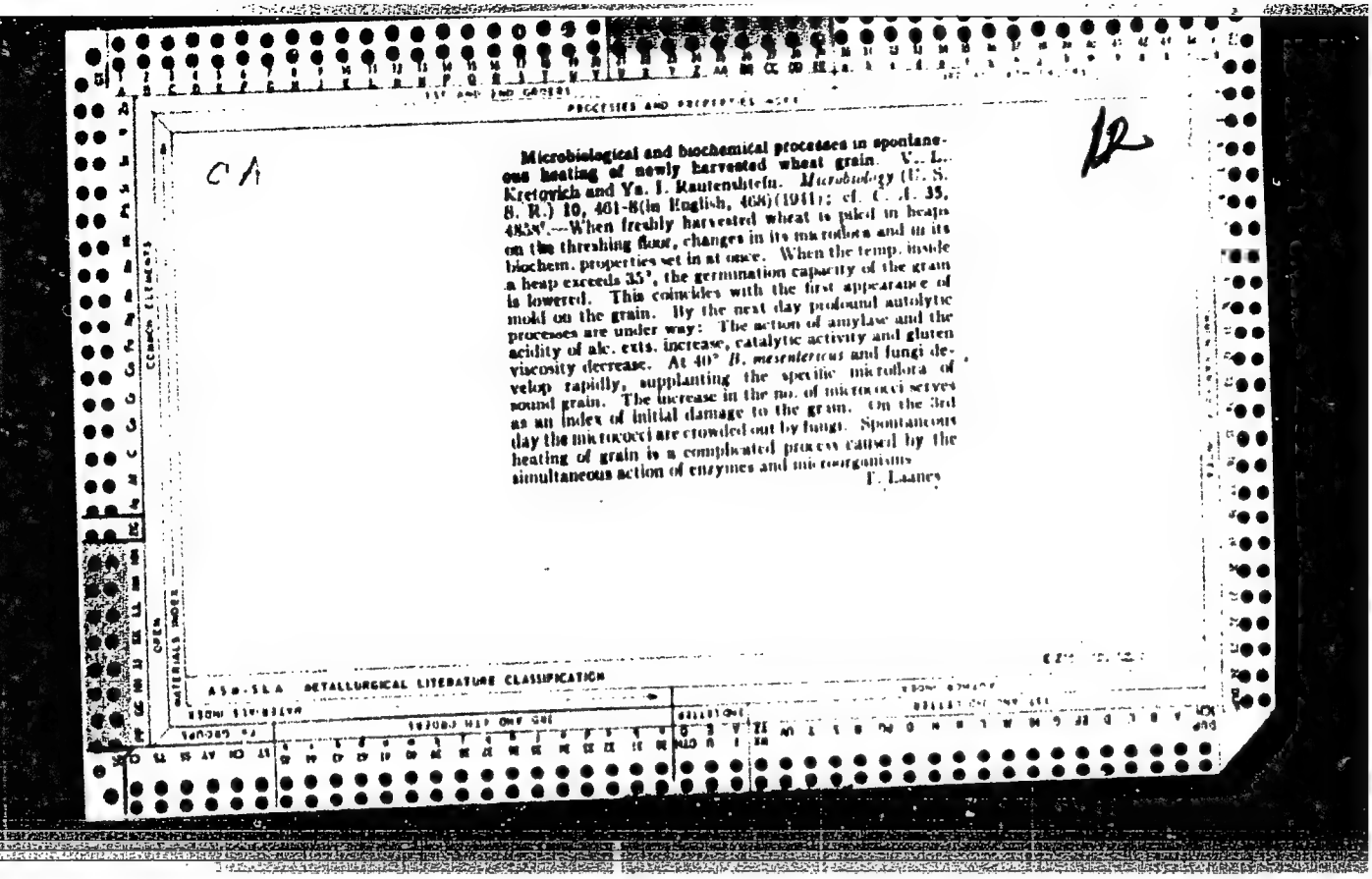
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Biochemical changes in wheat during its maturing after the harvest V. L. Kretovich and I. A. Akimushkina. *Biokhimiya* 6, No. 1/5, 361–[illegible] (1941) (German summary).—The activity of the oxidation-reduction enzymes and amylase, the nonprotein N compds., the acidity of alc. exts. and the properties of bran were detd. in freshly harvested, dried and after-matured wheat grains. Drying fresh grain in vacuo or with warm air diminishes the activity of the oxidation-reduction enzymes, the content of low mol. N compds., and the alkali-fixing substances. Drying increases the germinative capacity if the germination is done at 20°, but it lowers it if the germination is done at 10°. During the after-maturing, the synthesizing processes, which go on during the growth, terminate. This is expressed in a diminished content of nonprotein N compds. and of alkali-titratable substances in an alc. ext. of the grain. The elasticity of the bran decreases gradually. M. Hosch

INSTITUTE OF BIOCHEMISTRY OF THE ACADEMY OF SCIENCES, USSR, MOSCOW





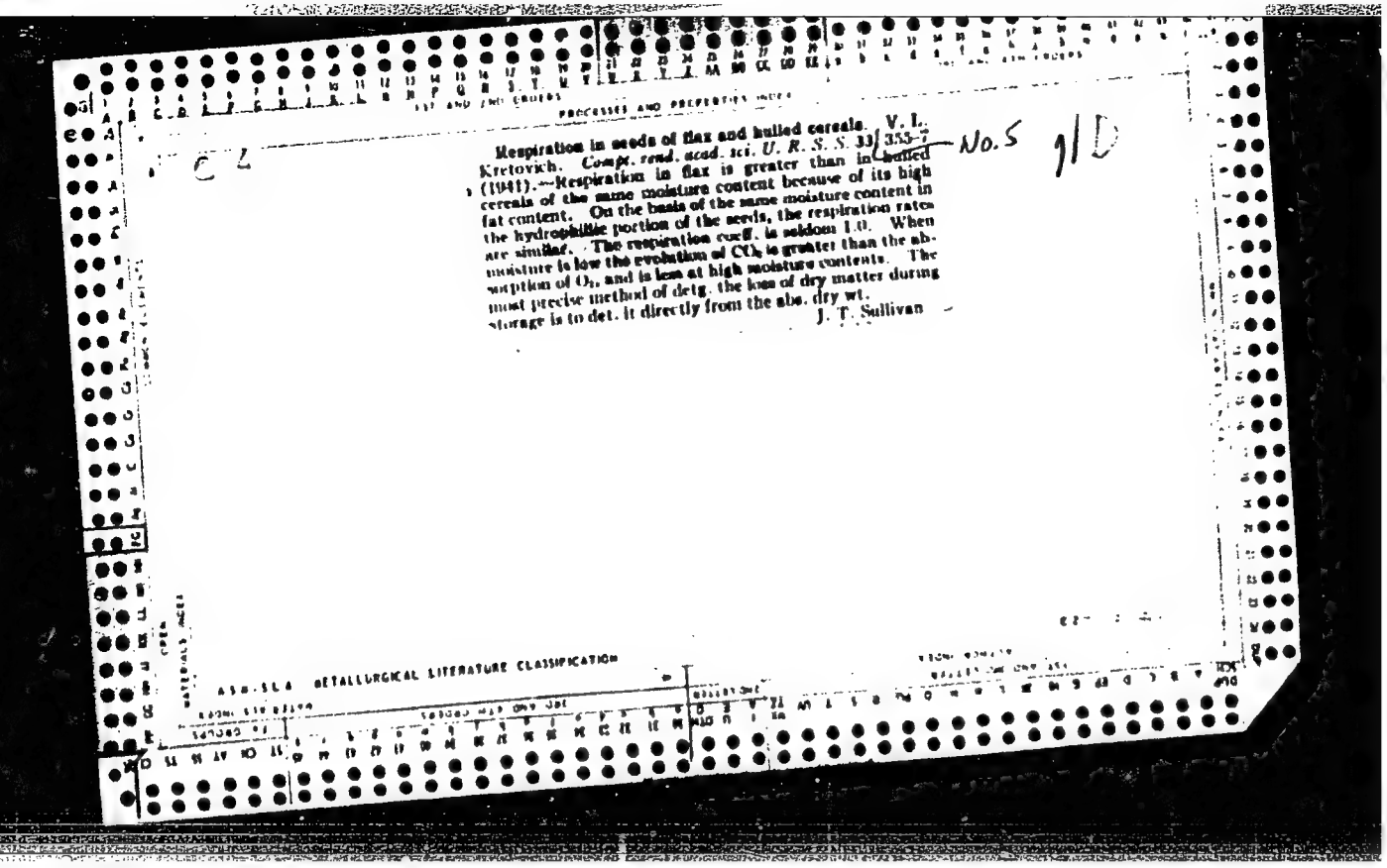
CA

Microbiological and biochemical processes in spontaneous heating of newly harvested wheat grain. V. L. Kretovich and Ya. I. Rautenshtein. *Microbiology* (U. S. S. R.) 10, 461-8(in English, 468)(1941); cf. C. A. 35, 4838⁹.—When freshly harvested wheat is piled in heaps on the threshing floor, changes in its microflora and in its biochem. properties set in at once. When the temp. inside a heap exceeds 35°, the germination capacity of the grain is lowered. This coincides with the first appearance of mold on the grain. By the next day profound autolytic processes are under way: The action of amylase and the acidity of alc. exts. increase, catalytic activity and gluten viscosity decrease. At 40° *B. mesentericus* and fungi develop rapidly, supplanting the specific microflora of sound grain. The increase in the no. of micrococci serves as an index of initial damage to the grain. On the 3rd day the micrococci are crowded out by fungi. Spontaneous heating of grain is a complicated process caused by the simultaneous action of enzymes and microorganisms.

T. Laanes

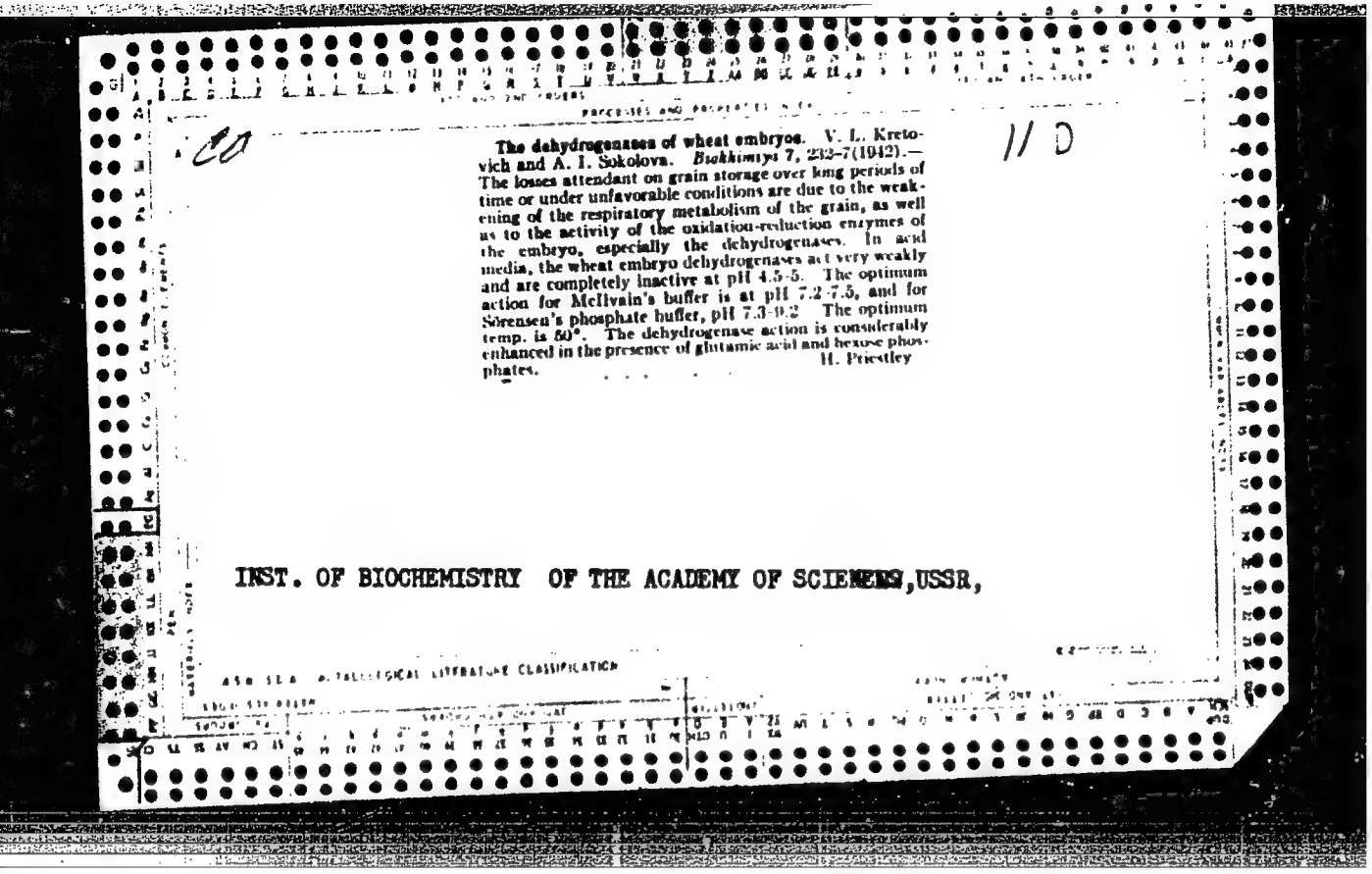
KRETOVICH, V. L.

"Concerning the Causes of the Reduced Germinative Capacity of Freshly-Harvested Corn," Dok. AN, 33, No. 2, 1941.



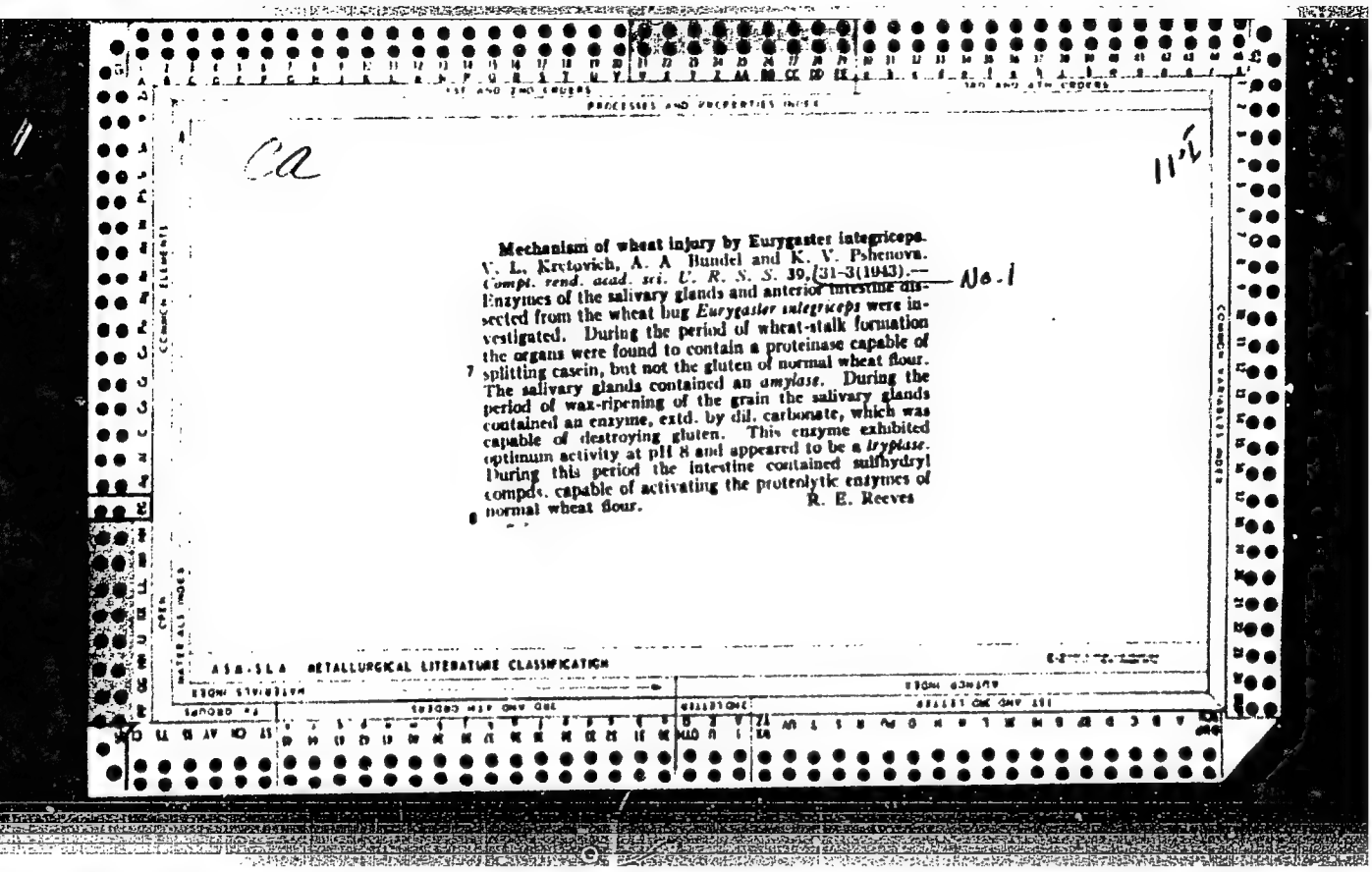
Respiration in seeds of flax and hulled cereals. V. I. Kretovich. *Compt. rend. acad. sci. U. R. S. S.* 33 (1941).—Respiration in flax is greater than in hulled cereals of the same moisture content because of its high fat content. On the basis of the same moisture content in the hydrophilic portion of the seeds, the respiration rates are similar. The respiration coeff. is seldom 1.0. When moisture is low the evolution of CO_2 is greater than the absorption of O_2, and is less at high moisture contents. The most precise method of detg. the loss of dry matter during storage is to det. it directly from the abs. dry wt.

J. T. Sullivan



The dehydrogenases of wheat embryos. V. L. Kretovich and A. I. Sokolova. *Biokhimiya* 7, 233-7(1942).—The losses attendant on grain storage over long periods of time or under unfavorable conditions are due to the weakening of the respiratory metabolism of the grain, as well as to the activity of the oxidation-reduction enzymes of the embryo, especially the dehydrogenases. In acid media, the wheat embryo dehydrogenases act very weakly and are completely inactive at pH 4.5-5. The optimum action for McIlvain's buffer is at pH 7.2-7.5, and for Sörensen's phosphate buffer, pH 7.3-9.2. The optimum temp. is 50°. The dehydrogenase action is considerably enhanced in the presence of glutamic acid and hexose phosphates.
H. Priestley

INST. OF BIOCHEMISTRY OF THE ACADEMY OF SCIENCES,USSR,



Ca

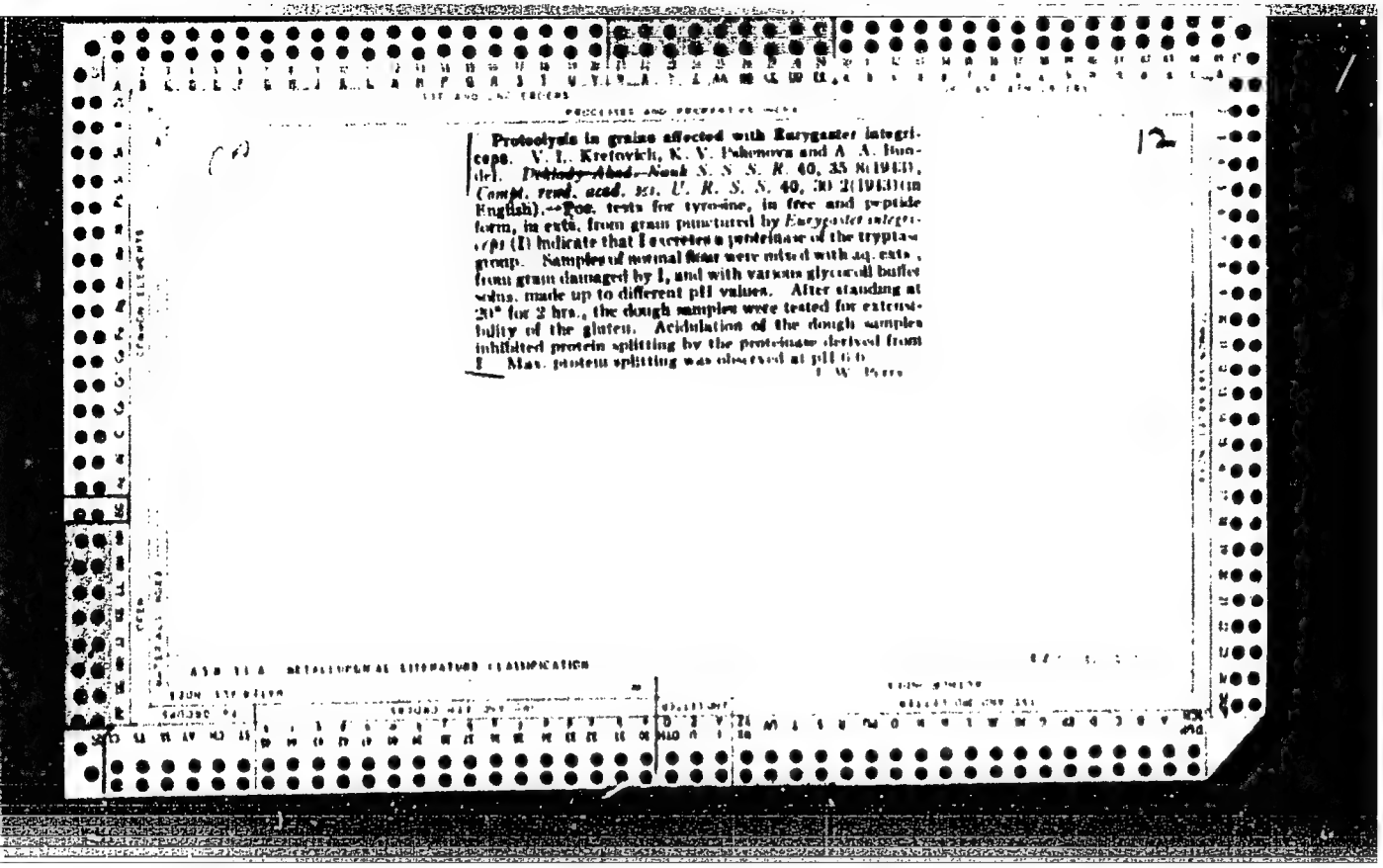
11-6

Mechanism of wheat injury by Eurygaster integriceps. V. L. Kretovich, A. A. Bundel and K. V. Pshenova. *Compt. rend. acad. sci. U. R. S. S.* 39,(31-3(1943).— Enzymes of the salivary glands and anterior intestine dissected from the wheat bug *Eurygaster integriceps* were investigated. During the period of wheat-stalk formation the organs were found to contain a proteinase capable of splitting casein, but not the gluten of normal wheat flour. The salivary glands contained an *amylase*. During the period of wax-ripening of the grain the salivary glands contained an enzyme, extd. by dil. carbonate, which was capable of destroying gluten. This enzyme exhibited optimum activity at pH 8 and appeared to be a *trypsase*. During this period the intestine contained sulfhydryl compds. capable of activating the proteolytic enzymes of normal wheat flour.

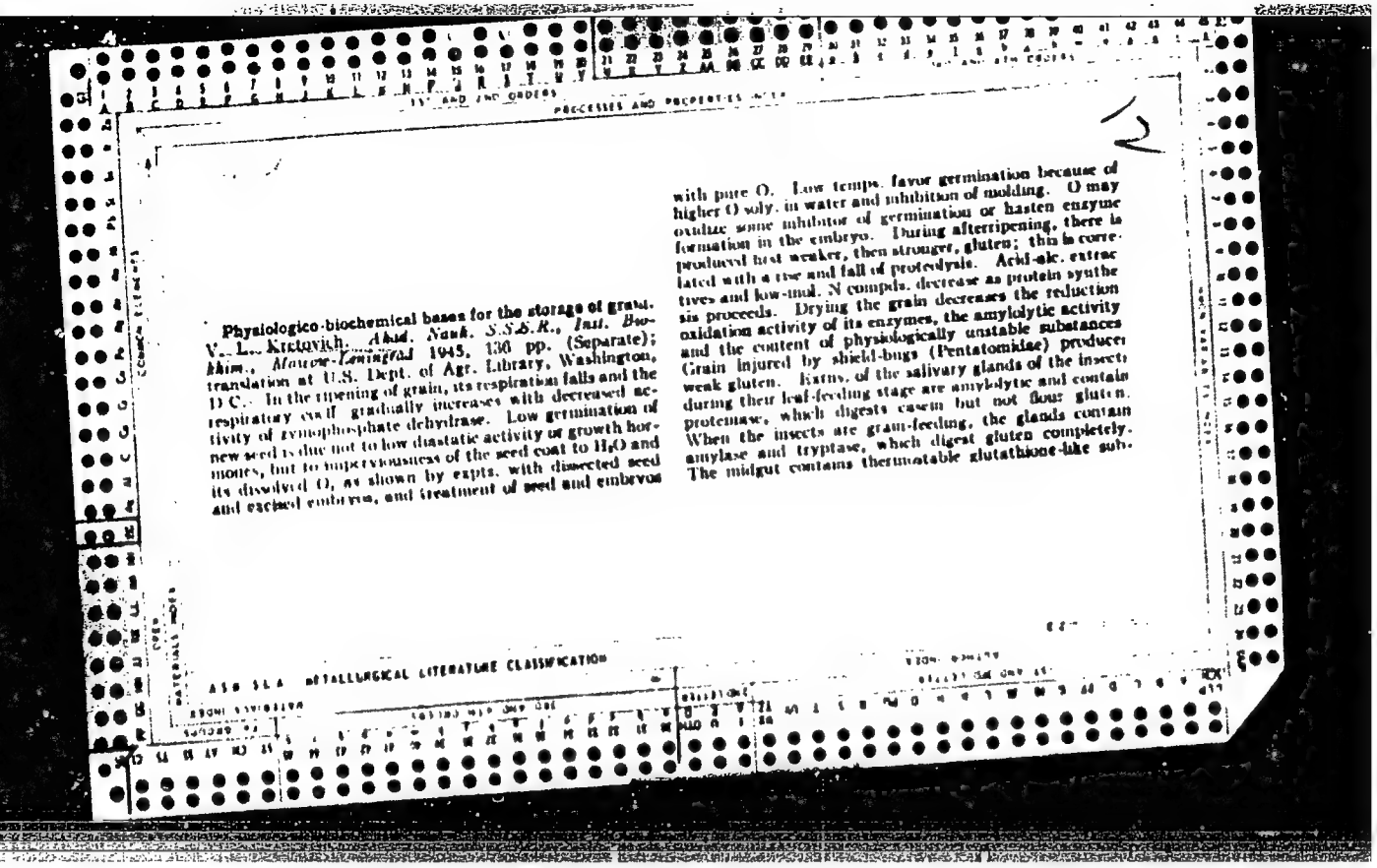
R. E. Reeves

No. 1

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION



Proteolysis in grains affected with Eurygaster integriceps. V. L. Krefovich, K. V. Pshenova and A. A. Bundel. *Doklady Akad. Nauk S. S. S. R.* 40, 35-8(1943); *Compt. rend. acad. sci. U. R. S. S.* 40, 30-2(1943)(in English).—Qual. tests for tyrosine, in free and peptide form, in exts. from grain punctured by *Eurygaster integriceps* (I) indicate that I secretes a proteinase of the trypsin group. Samples of normal flour were mixed with aq. exts. from grain damaged by I, and with various glycocoll buffer solns. made up to different pH values. After standing at 30° for 2 hrs., the dough samples were tested for extensibility of the gluten. Acidulation of the dough samples inhibited protein splitting by the proteinase derived from I. Max. protein splitting was observed at pH 6.6.



PROCESSES AND PROPERTIES INDEX

Physiologico-biochemical bases for the storage of grain. V. L. Kretovich. *Akad. Nauk. S.S.S.R., Inst. Biokhim., Moscow-Leningrad* 1945. 136 pp. (Separate); translation at U.S. Dept. of Agr. Library, Washington, D.C. In the ripening of grain, its respiration falls and the respiratory coeff. gradually increases with decreased activity of zymophosphate dehydrase. Low germination of new seed is due not to low diastatic activity or growth hormones, but to imperviousness of the seed coat to H_2O and its dissolved O, as shown by expts. with dissected seed and excised embryos, and treatment of seed and embryos with pure O. Low temps. favor germination because of higher O soly. in water and inhibition of molding. O may oxidize some inhibitor of germination or hasten enzyme formation in the embryo. During afterripening, there is produced first weaker, then stronger, gluten; this is correlated with a rise and fall of proteolysis. Acid-alc. extractives and low-mol. N compds. decrease as protein synthesis proceeds. Drying the grain decreases the reduction oxidation activity of its enzymes, the amylolytic activity and the content of physiologically unstable substances. Grain injured by shield-bugs (Pentatomidae) produces weak gluten. Harns. of the salivary glands of the insects during their leaf-feeding stage are amylolytic and contain proteinase, which digests casein but not flour gluten. When the insects are grain-feeding, the glands contain amylase and tryptase, which digest gluten completely. The midgut contains thermostable glutathione-like sub-

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

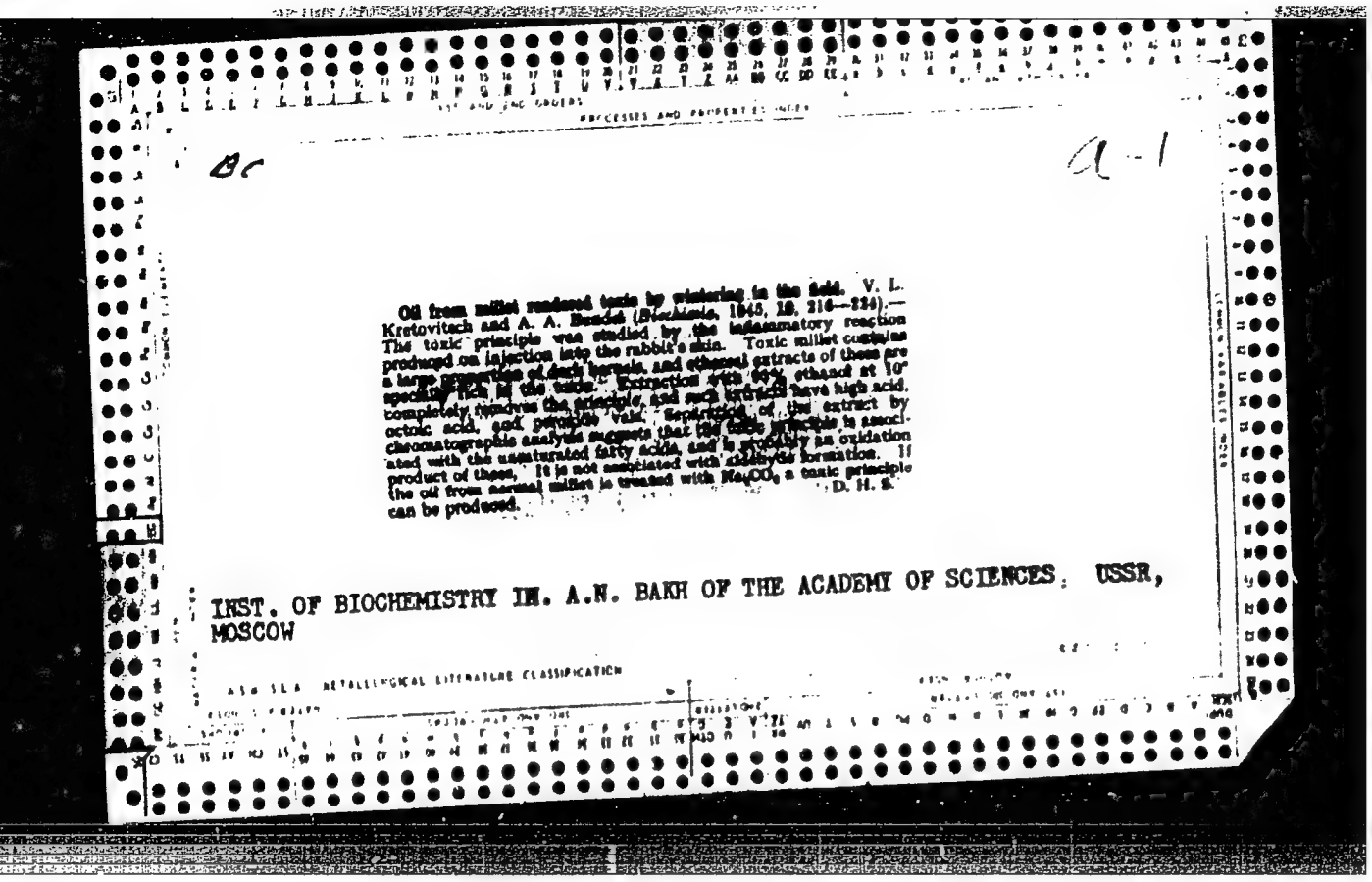
stances that activate the enzymes in normal flour. The insect injury lowers the total N and gliadin of the grain; the gliadin becomes very sol., its viscosity decreases, sp. rotation changes, and S content increases. The proteolysis releases much free and peptidized tyrosine. Insect-induced proteolysis is most evident in soda exts.; it is not due to cysteine-like activators. It is favored by neutral reaction and can be checked by acidification, adding AcOH bacteria or yeast liquid to the dough, dough formation at reduced temps., adding KI or H_2O_2, or best by heating the grain, preferably with a quick steam treatment. Grain that is frozen before harvest produces flour of low H_2O-absorptive quality and poor baking properties; it is abnormally high in total and nonprotein N, diastatic power, acidity, and content of H_2O-sol. matter, and produces less-elastic gluten, owing to proteolysis or protein coagulation; its gluten content is low, and its amylase shows strong saccharification and dextrinization. Vitreous grain is slightly more hygroscopic than mealy grain, but marked chemical differences in grain have little effect on its hygroscopic quality. The grain embryo contains more hygroscopic H_2O than the endosperm. The favorable effect of high temps. on H_2O absorption does not follow van't Hoff's law, because the process is biodynamic and not purely physical. Movement of H_2O to cool loci in grain masses (unpublished data of Vasileva and Tsigankova) is ascribed to thermodiffusion and H_2O condensation, with the moisture gradient approx. proportional to the temp. gradient. In grain below 16% moisture content, much of the CO_2 is produced anaerobically, thus reduction-oxidation processes in stored grain are conditioned by moisture and not governed by laws of aerobic respiration. Enzymic processes continue in quiescent grain, indicating that the critical moisture of stored grain is 14.5–15.0%. In old, nonviable grain amylase is fully active. Changes in proteolytic activity do not follow viability changes. Titratable acidity increases with age of seed. There is close correlation between loss of dehydrase activity of embryos ($NaSCO_3$ test) and of viability. Respiration falls with viability. Moistening embryos increases their dehydrase activity (methylene blue test), but later the enzyme is inactivated by molds. The max. activity is at pH 7.3–9.2 with little pH effect over a wide zone, and at 50°, with a sharp decrease at 55°. The dehydrase system of wheat embryos is activated by glutamic acid, hexose di- and monophosphate, and phosphoglucomic acid as H donors. The wheat catalase which affects triacetin is greatest in flour, less in bran, and least in embryos. In the wheat-lipase action on olive oil, embryo is most active, bran least. The moisture-temp. ranges permitting safe grain storage are shown graphically. In afterripening "sweating," due to syneresis, is considered the basic cause of "dry" spontaneous heating and molding of grain. Combine-harvested grain contg. 13–16% moisture is best stored with forced ventilation systems. Wheat with 16–23% moisture is best treated by heating at 45°. Above this temp. the grain loses viability. Heating reduces the content of alc.-sol. matter, the elasticity of the gluten, and the titratable acidity of the grain; this indicates hastened afterripening. Baking quality and loaf vol. are improved. Wheat of 14–15% moisture content retains its viability if stored at 5° to −15°, and most (21%) wheat can be safely stored 3 mo. at −5°. 149 Russian and 244 non-Russian references. K. Starr Chester

KRETOVICH, V. L.

"New Method of Extraction of the Free Fatty Acids from Oil," Biokhim., Vol. 10, No. 2, 1945.

INST. OF BIOCHEMISTRY IM. A.N. BAKH OF THE ACADEY OF SCIENCES, USSR, MOSCOW

P.159.



Oil from millet rendered toxic by ptisering in the field. V. L. Kretovitch and A. A. Bundel (*Biochimia*, 1945, 10, 216—224).—This toxic principle was studied by the inflammatory reaction produced on injection into the rabbit's skin. Toxic millet contains a large proportion of dead kernels, and ethanol extracts of these are specially rich in the toxin. Extraction with 60% ethanol at 10° completely removes the principle, and such extracts have high acid, octoic acid, and peroxide val. Separation of the extract by chromatographic analysis suggests that the toxic principle is associated with the unsaturated fatty acids, and is probably an oxidation product of these. It is not associated with aldehyde formation. If the oil from normal millet is treated with $KMnO_4$, a toxic principle can be produced. D. H. S.

INST. OF BIOCHEMISTRY IM. A.N. BAKH OF THE ACADEMY OF SCIENCES, USSR, MOSCOW

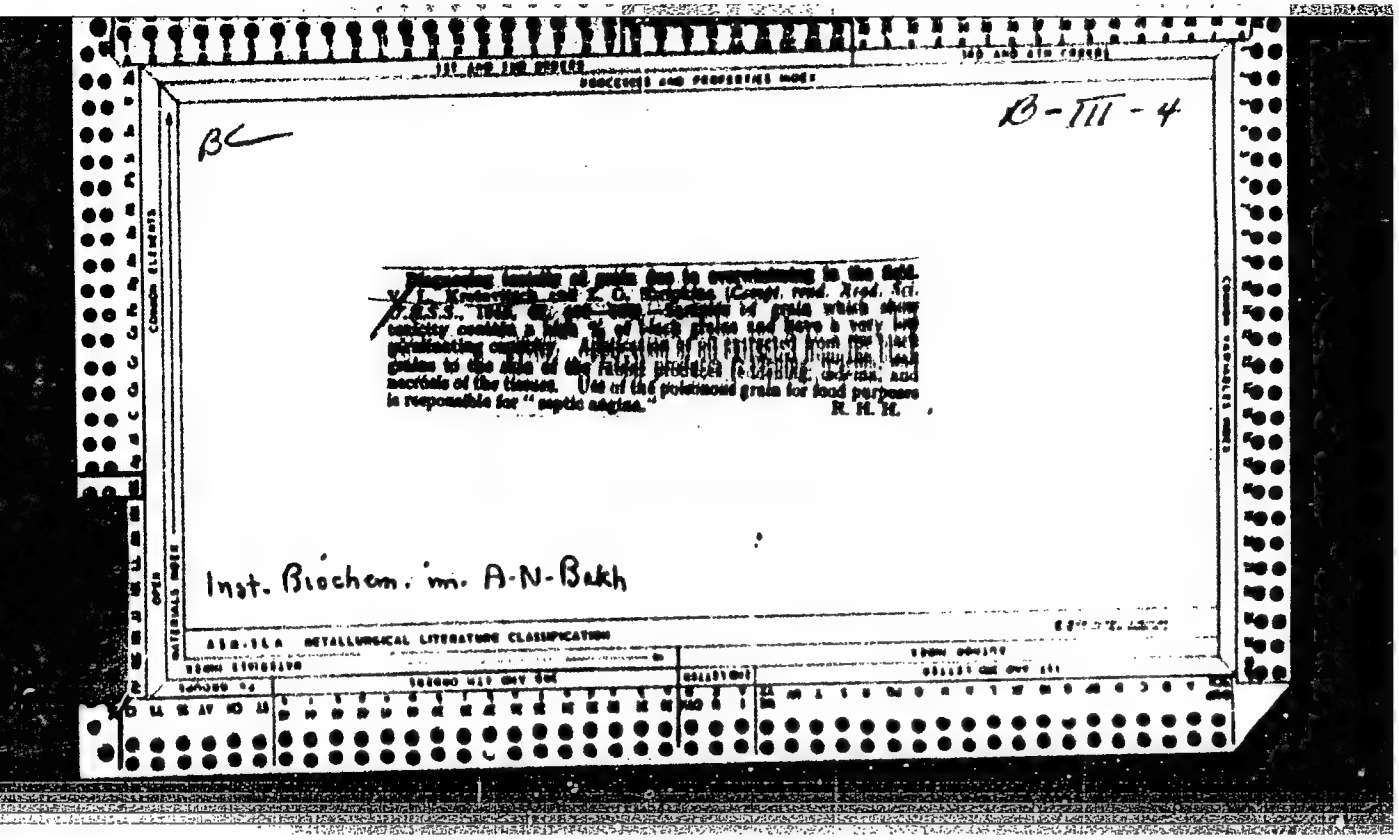
12

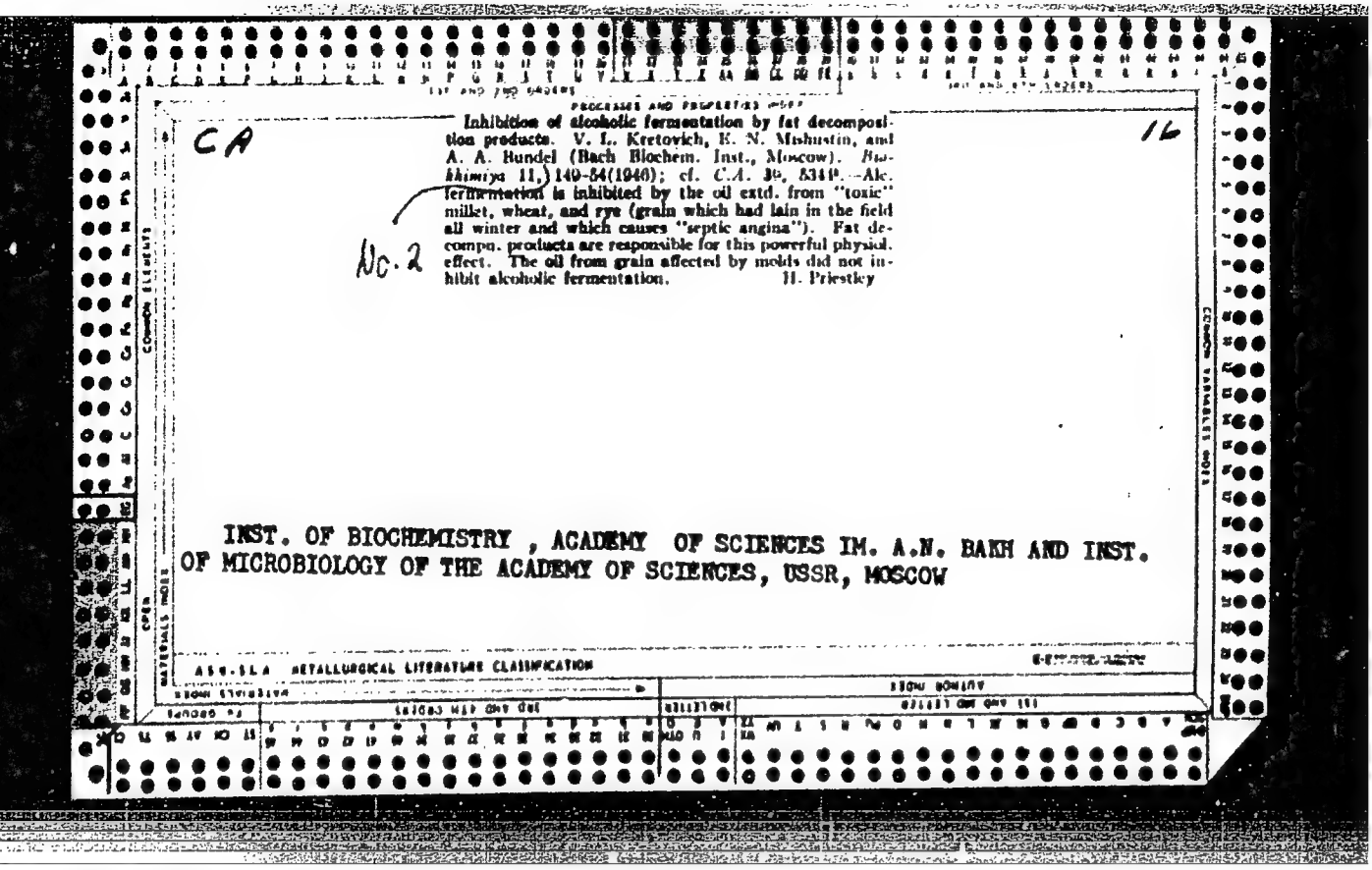
Biochemical properties of toxic millet. V. Kretovich, N. Bundel, E. Shalphina, and V. Shvetsova (Moscow Inst. Cereal Research). *Biokhimiya* 10, 379-84(1945).— Grain is often found to be toxic as a food if it has lain all winter in the field, covered with snow. Toxic millet differs from normal grain in having a higher content of nonprotein and amino N, and a lower activity of oxidizing enzymes. Dextrin formation by amylase, as detd. by Wohlgemuth's method, is twice as high in toxic millet.

H. Priestley

INST. OF BIOCHEMISTRY IM.A.N. BAKH OF THE ACADEMY OF SCIENCES, USSR, AND THE ALL-UNION GRAIN RESEACH INSTITUTE

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





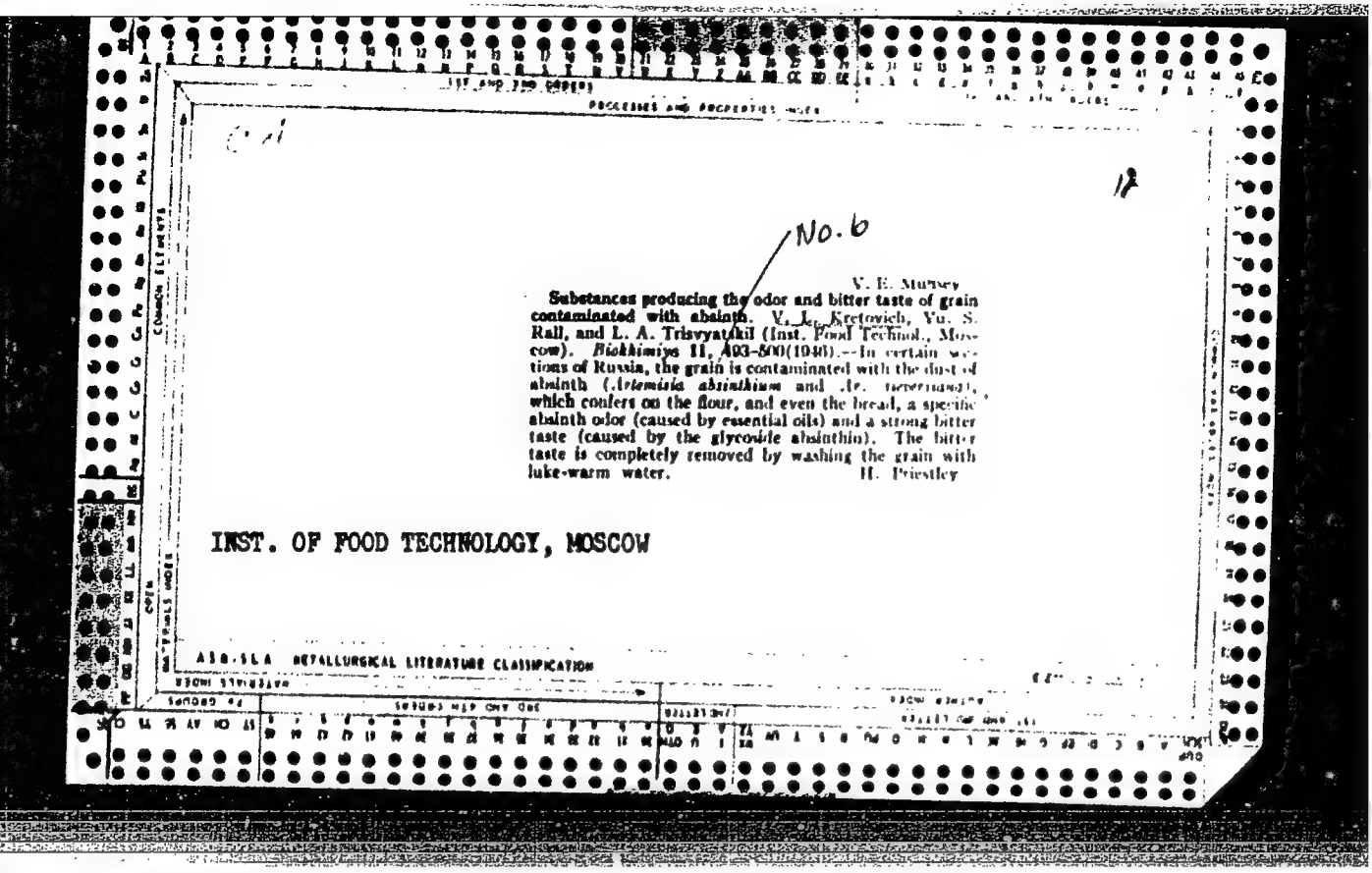
CA

16

No. 2

Inhibition of alcoholic fermentation by fat decomposition products. V. L. Kretovich, E. N. Mishustin, and A. A. Bundel (Bach Biochem. Inst., Moscow). *Biokhimiya* 11, 140-54(1946); cf. *C.A.* 39, 5349.—Alc. fermentation is inhibited by the oil extd. from "toxic" millet, wheat, and rye (grain which had lain in the field all winter and which causes "septic angina"). Fat decompn. products are responsible for this powerful physiol. effect. The oil from grain affected by molds did not inhibit alcoholic fermentation. H. Priestley

INST. OF BIOCHEMISTRY , ACADEMY OF SCIENCES IM. A.N. BAKH AND INST. OF MICROBIOLOGY OF THE ACADEMY OF SCIENCES, USSR, MOSCOW



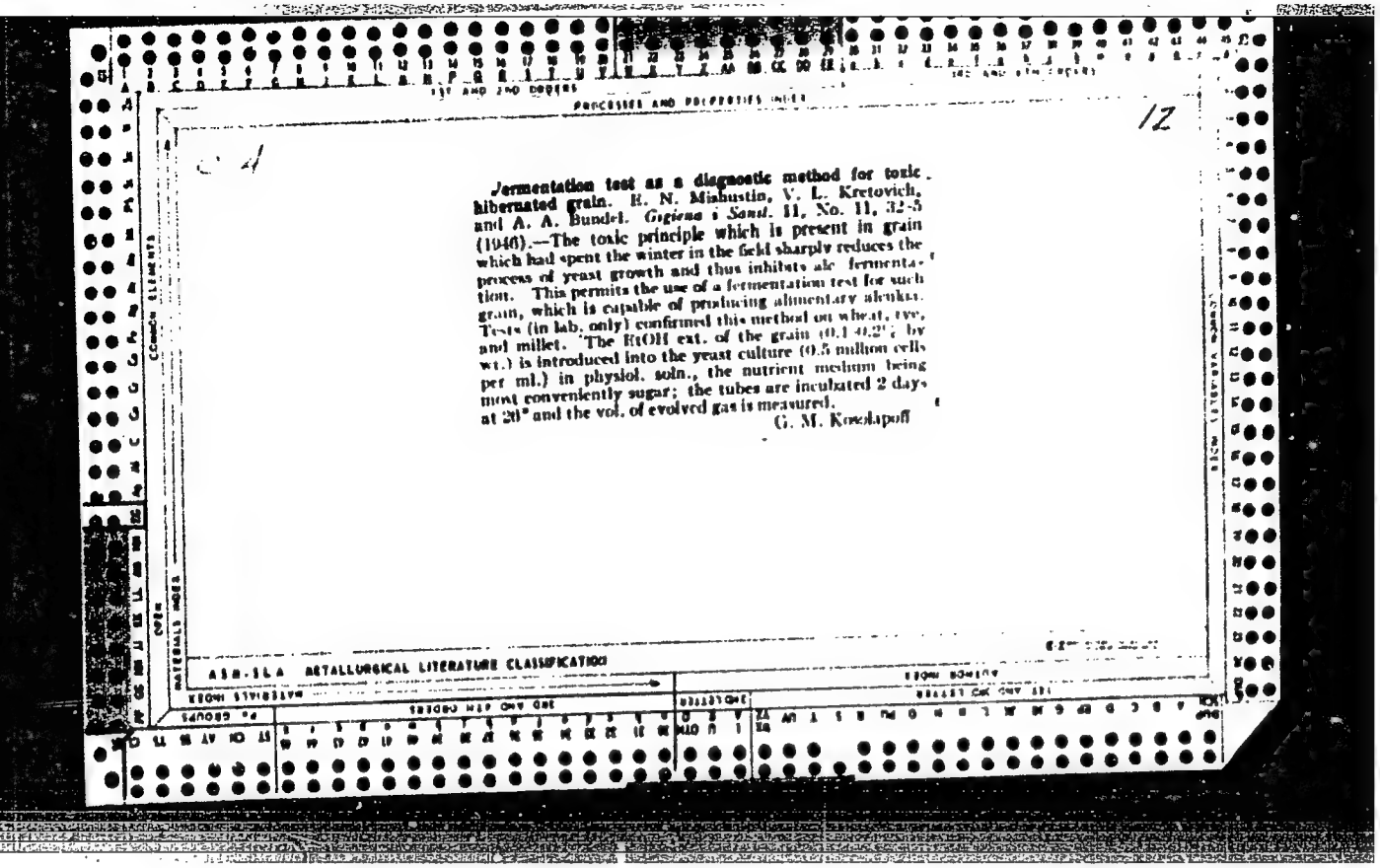
No. 6

V. E. Murvey

Substances producing the odor and bitter taste of grain contaminated with absinth. V. L. Kretovich, Yu. S. Rall, and L. A. Trisvyatskil (Inst. Food Technol., Moscow). *Biokhimiya* **11**, 493-500(1946).--In certain sections of Russia, the grain is contaminated with the dust of absinth (*Artemisia absinthium* and *A. taurica*), which confers on the flour, and even the bread, a specific absinth odor (caused by essential oils) and a strong bitter taste (caused by the glycoside absinthin). The bitter taste is completely removed by washing the grain with luke-warm water. H. Priestley

INST. OF FOOD TECHNOLOGY, MOSCOW

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



Fermentation test as a diagnostic method for toxic hibernated grain. R. N. Miahustin, V. L. Kretovich, and A. A. Bundel. *Gigiena i Sanit.* 11, No. 11, 32-5 (1946).—The toxic principle which is present in grain which had spent the winter in the field sharply reduces the process of yeast growth and thus inhibits alc. fermentation. This permits the use of a fermentation test for such grain, which is capable of producing alimentary alcohol. Tests (in lab. only) confirmed this method on wheat, rye, and millet. The EtOH ext. of the grain (0.1-0.2%, by wt.) is introduced into the yeast culture (0.5 million cells per ml.) in physiol. soln., the nutrient medium being most conveniently sugar; the tubes are incubated 2 days at 20° and the vol. of evolved gas is measured.

G. M. Kosolapoff

KRETOVICH, V. L.

MISHUSTIN, E. N., KRETOVICH, V.L. , and BUNDEL', A. A. "Fermentative Test as a Method of Diagnosing Toxicity of Grain," in Reports of the Scientific-Research Work for 1945, Department of Biological Science, Publishing House of the Academy of Science USSR, Moscow, 1947, p. 150. 511 Ak144

Sira-Si-90-53, 15 Dec. 1953

PROCESSES AND PROPERTIES INDEX

CA 11-D

Biochemistry of the ripening of rye grain. V. Kretovich, R. Tokareva, I. Petrova, T. Drozdova, L. Auerman, and N. Smolina (Baking Inst., Moscow). *Biokhimiya* 12, 446-56(1947); cf. C.A. 30, 8201[e]. As the grain ripens, there is a decrease in the amylase and proteolytic activity, and in the nonprotein N and reducing sugars. The farther the ripening proceeds, the less the proteins and starches are liable to be attacked by the enzymes. Early harvesting of the grain is not the cause of poor bread-baking qualities, but the slightest sprouting is highly detrimental. H. Priestley

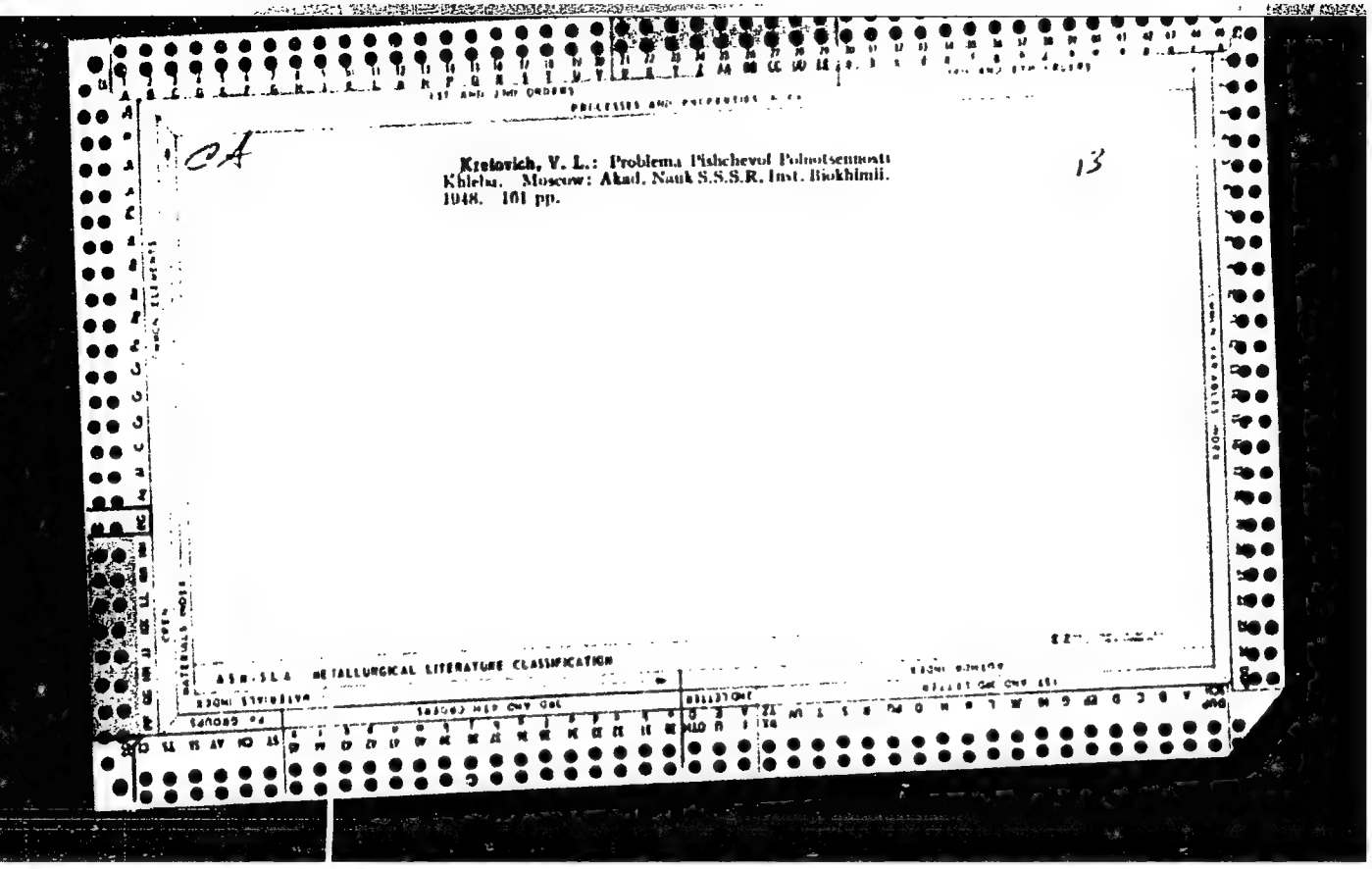
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

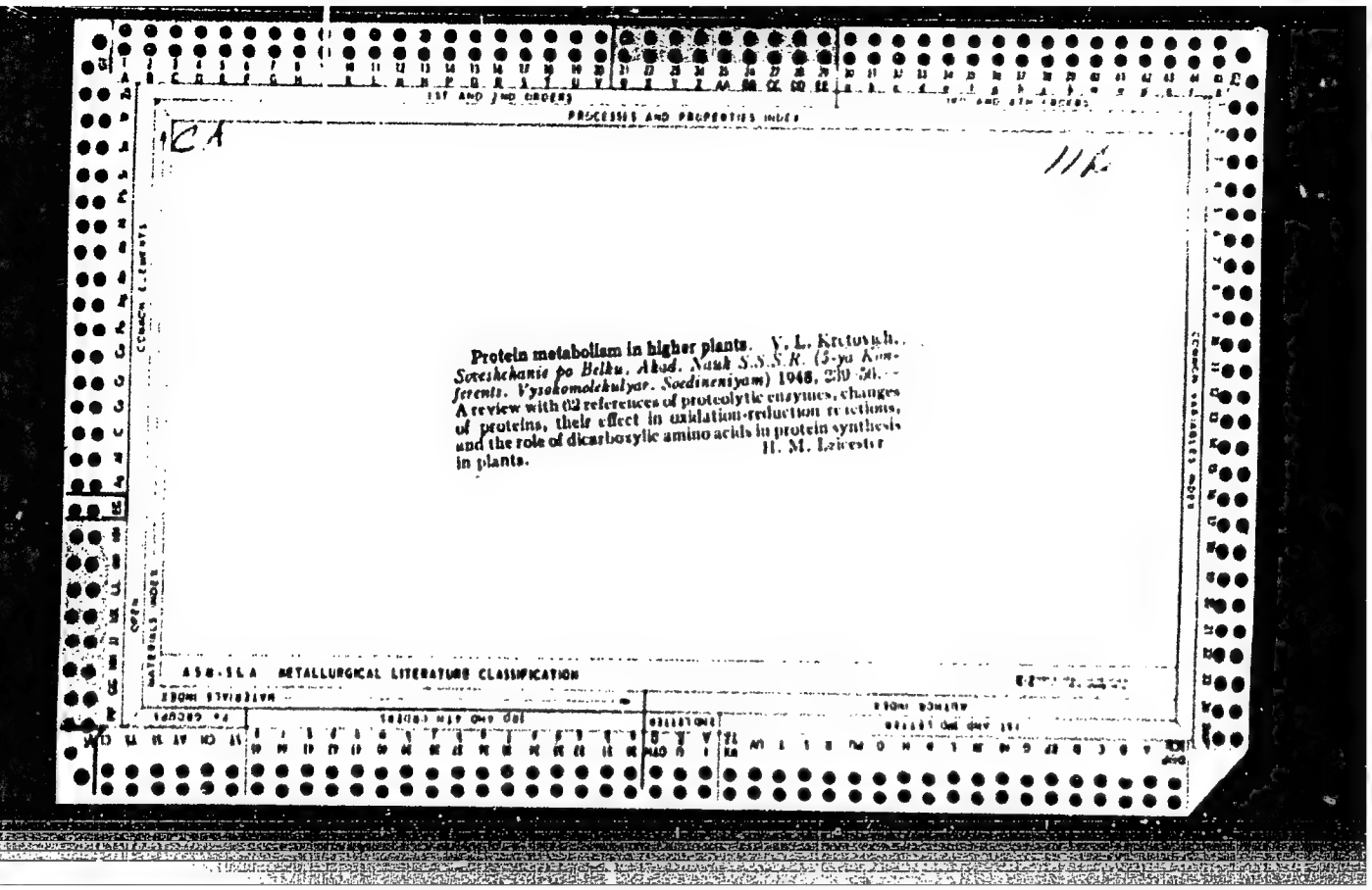
KRUTOVICH, V. L.

"Investigation of (Fungus?) qummies of Rye Grain," Biokhim., Vol. 12, No. 12, 1947.

KRETOVICH, V., TOKAREVA, R., AUERMAN L., SMOLINA N., KULMAN A., AND BRANOPOL'SKAYA R.

"Change in the Quality of Rye Flour During Storage, " Dok. An, 58, No.9, 1947.





CA

11E

Protein metabolism in higher plants. V. L. Kretovich. *Soveshchanie po Belku. Akad. Nauk S.S.S.R. (Trudy Konferents. Vysokomolekulyar. Soedinenii)* 1948, 230-50. A review with 82 references of proteolytic enzymes, changes of proteins, their effect in oxidation-reduction reactions, and the role of dicarbosylic amino acids in protein synthesis in plants. H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KRETOVICH, V. L.

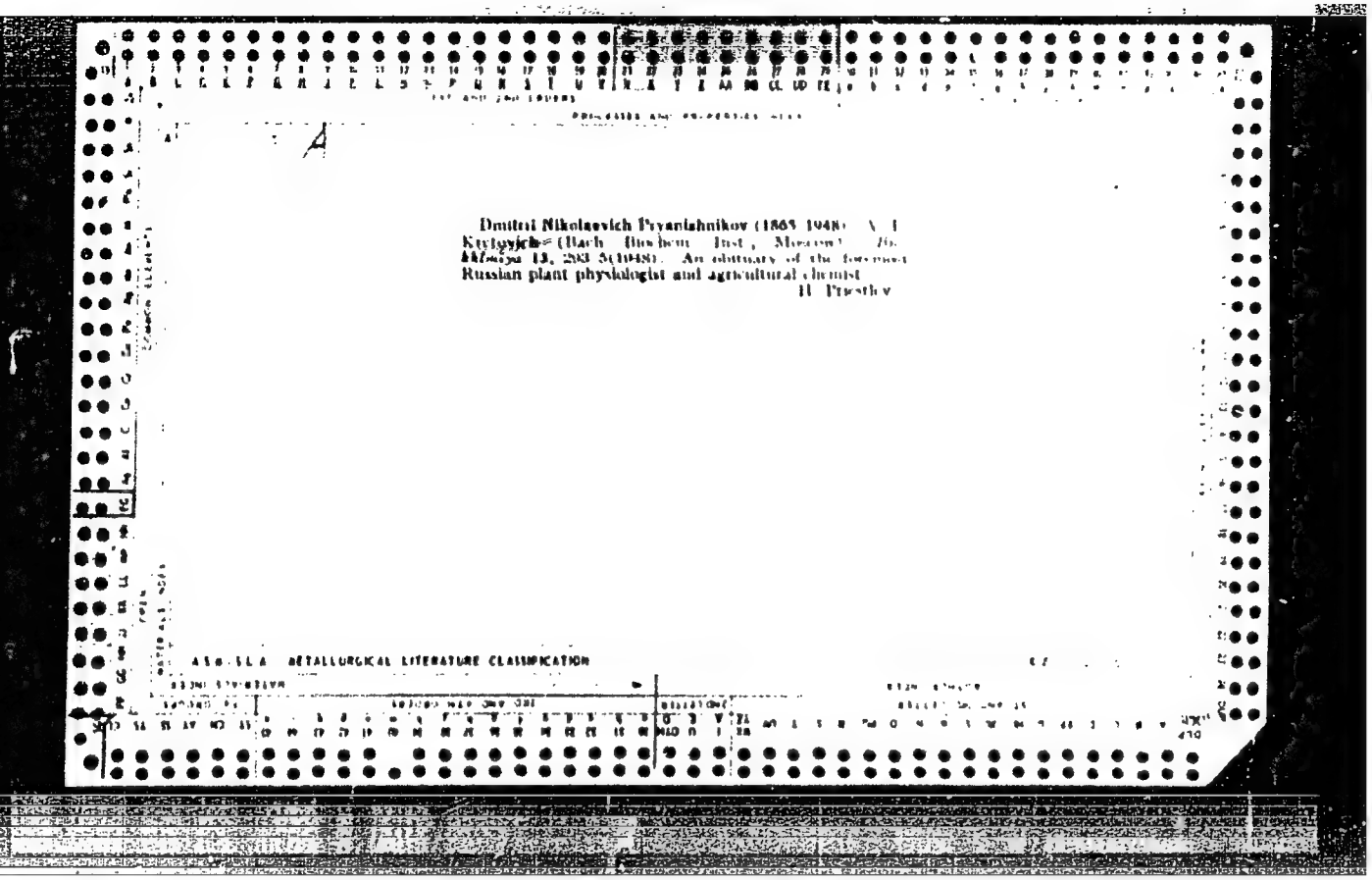
USSR/Medicine -Plants
Medicine -Metabolism

Mar/Apr 46

"Problem of Metabolism of Plants at the Fourth All-Union Botanical Convention," A. I. Oparin, V. L. Kretovich, 1½ pp

"Botan Zhur" No 2

PA 28/49T64



Dmitrii Nikolaevich Pryanishnikov (1865 1948) V I
Kretovich (Bach Biochem Inst , Moscow) Zh
Akad Nauk SSSR 13, 203 5(1948) An obituary of the foremost
Russian plant physiologist and agricultural chemist
H Pirotsky

A S & T I A METALLURGICAL LITERATURE CLASSIFICATION

KRETOVICH, V. L.

PA 12/49T1

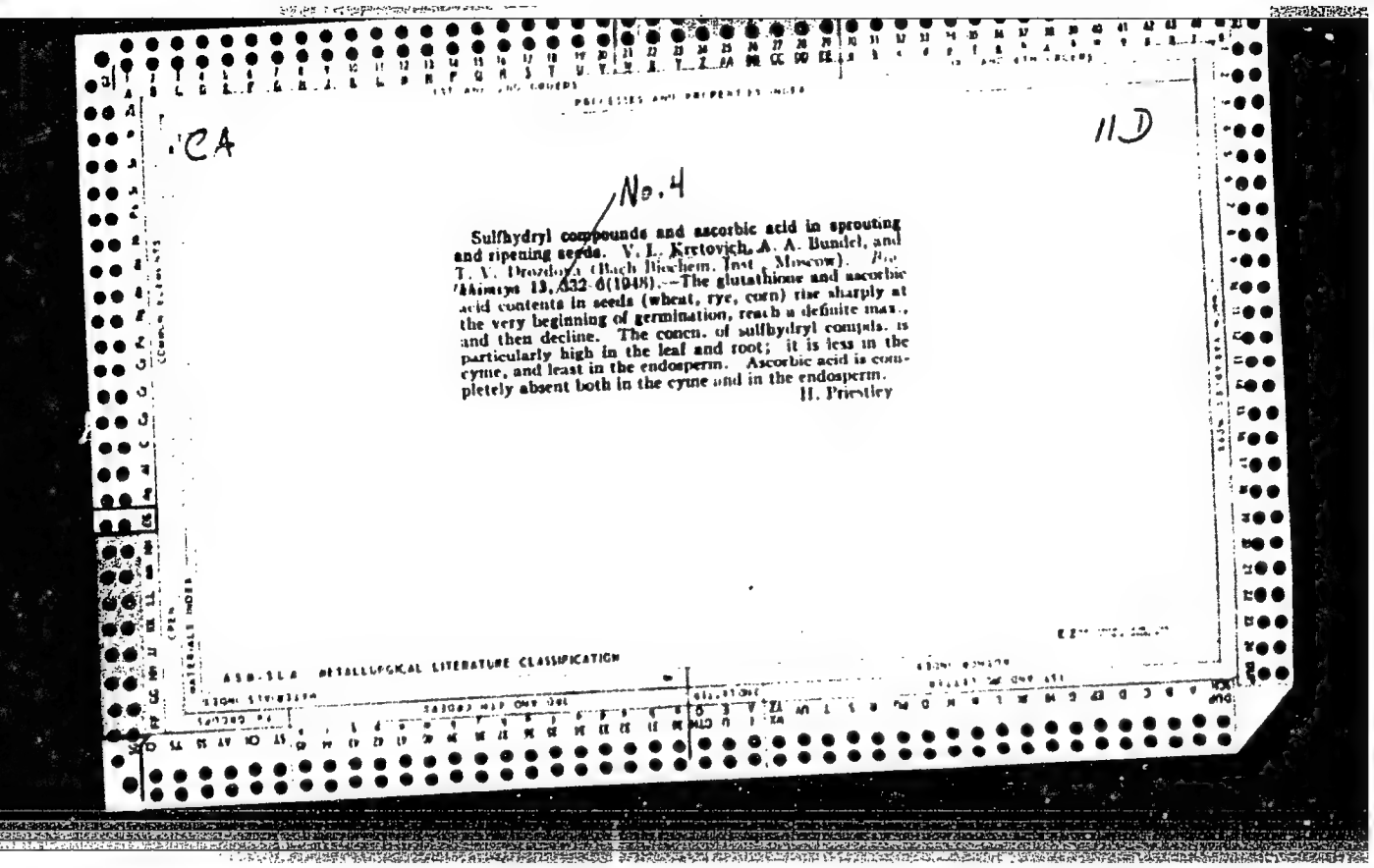
USSR/Academy of Sciences Jul/Aug 1948
Biography

"In Memory of Academician Dimitriy Nikolayevich Pryanishnikov," V. L. Kretovich, 2 3/4 pp

"Biokhimiya" Vol XIII, No 4

Obituary notice of D. N. Pryanishnikov, eminent agrochemist, physiologist and biologist. Photograph shows head and shoulders (CIA Photo Accession No 3108).

[redacted] 12/49T1



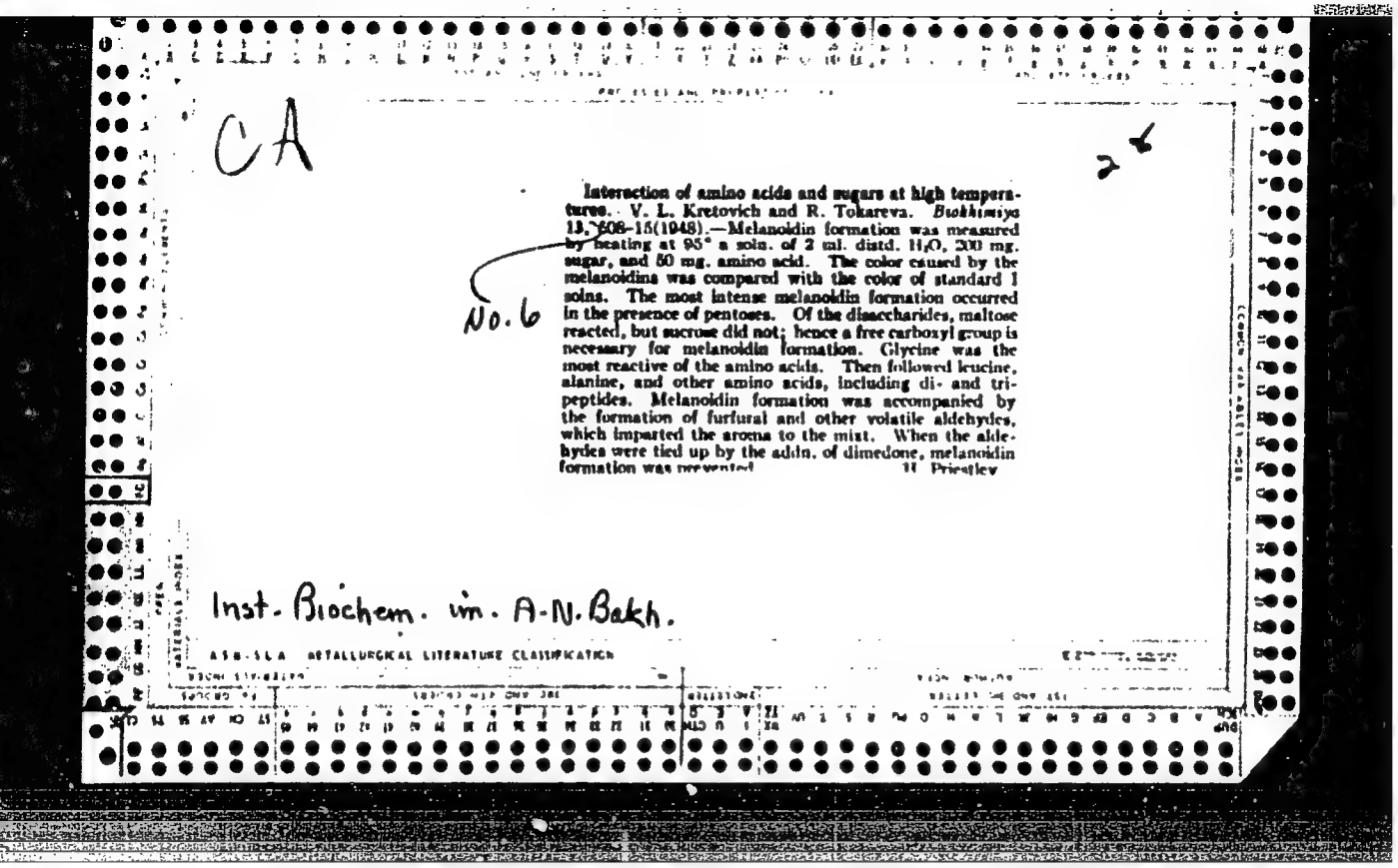
CA

11D

No. 4

Sulfhydryl compounds and ascorbic acid in sprouting and ripening seeds. V. L. Kretovich, A. A. Bundel, and T. V. Drozdova (Biochem. Inst., Moscow). *Biokhimiya* 13, 432-6(1948).—The glutathione and ascorbic acid contents in seeds (wheat, rye, corn) rise sharply at the very beginning of germination, reach a definite max., and then decline. The concn. of sulfhydryl compds. is particularly high in the leaf and root; it is less in the cyme, and least in the endosperm. Ascorbic acid is completely absent both in the cyme and in the endosperm.
H. Priestley

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



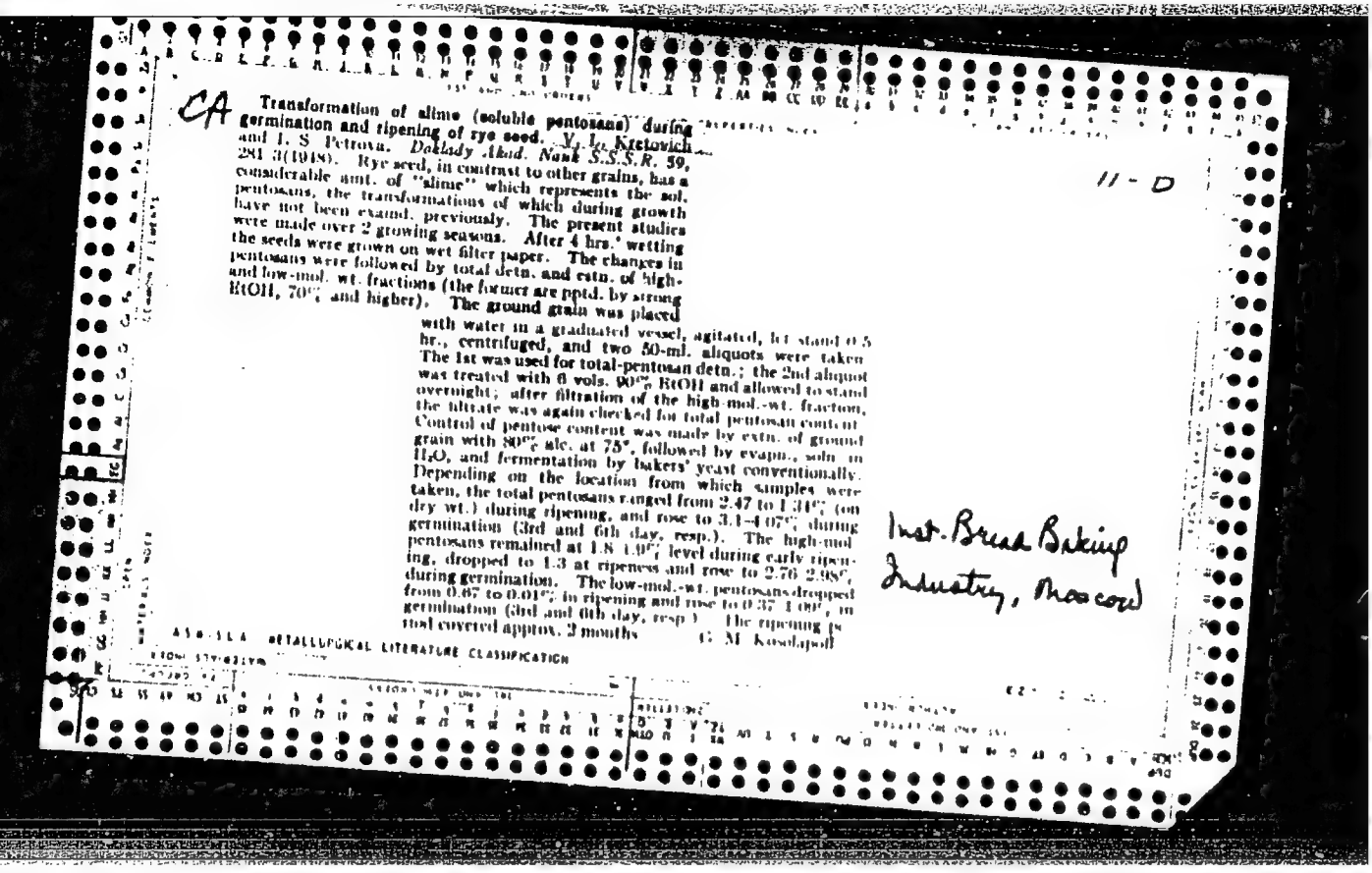
CA

No. 6

Interaction of amino acids and sugars at high temperatures. V. L. Kretovich and R. Tokareva. *Biokhimiya* 13, 508-15(1948).—Melanoidin formation was measured by heating at 95° a soln. of 2 ml. distd. H_2O, 300 mg. sugar, and 50 mg. amino acid. The color caused by the melanoidins was compared with the color of standard I solns. The most intense melanoidin formation occurred in the presence of pentoses. Of the disaccharides, maltose reacted, but sucrose did not; hence a free carboxyl group is necessary for melanoidin formation. Glycine was the most reactive of the amino acids. Then followed leucine, alanine, and other amino acids, including di- and tripeptides. Melanoidin formation was accompanied by the formation of furfural and other volatile aldehydes, which imparted the aroma to the mixt. When the aldehydes were tied up by the addn. of dimedone, melanoidin formation was prevented. H. Priestley

Inst. Biochem. im. A-N. Bakh.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Transformation of slime (soluble pentosans) during germination and ripening of rye seed. V. I. Kretovich and I. S. Petrova. *Doklady Akad. Nauk S.S.S.R.* 59, 281-3(1948). Rye seed, in contrast to other grains, has a considerable amt. of "slime" which represents the sol. pentosans, the transformations of which during growth have not been examd. previously. The present studies were made over 2 growing seasons. After 4 hrs.' wetting the seeds were grown on wet filter paper. The changes in pentosans were followed by total detn. and estn. of high- and low-mol. wt. fractions (the former are ppted. by strong EtOH, 70% and higher). The ground grain was placed with water in a graduated vessel, agitated, let stand 0.5 hr., centrifuged, and two 50-ml. aliquots were taken. The 1st was used for total-pentosan detn.; the 2nd aliquot was treated with 6 vols. 90% EtOH and allowed to stand overnight; after filtration of the high-mol.-wt. fraction, the filtrate was again checked for total pentosan content. Control of pentose content was made by extn. of ground grain with 80% alc. at 75°, followed by evapn., soln. in H_2O, and fermentation by bakers' yeast conventionally. Depending on the location from which samples were taken, the total pentosans ranged from 2.47 to 1.34% (on dry wt.) during ripening, and rose to 3.1–4.07% during germination (3rd and 6th day, resp.). The high-mol. pentosans remained at 1.8–1.0% level during early ripening, dropped to 1.3 at ripeness and rose to 2.76–2.08% during germination. The low-mol.-wt. pentosans dropped from 0.67 to 0.01% in ripening and rose to 0.37–1.09% in germination (3rd and 6th day, resp.). The ripening (s most covered appros. 2 months. G. M. Kosolapoff

ASTIA METALLURGICAL LITERATURE CLASSIFICATION

II-D

Inst. Bread Baking Industry, Moscow

KRETOVICH, V. L.

21 Mar 1948

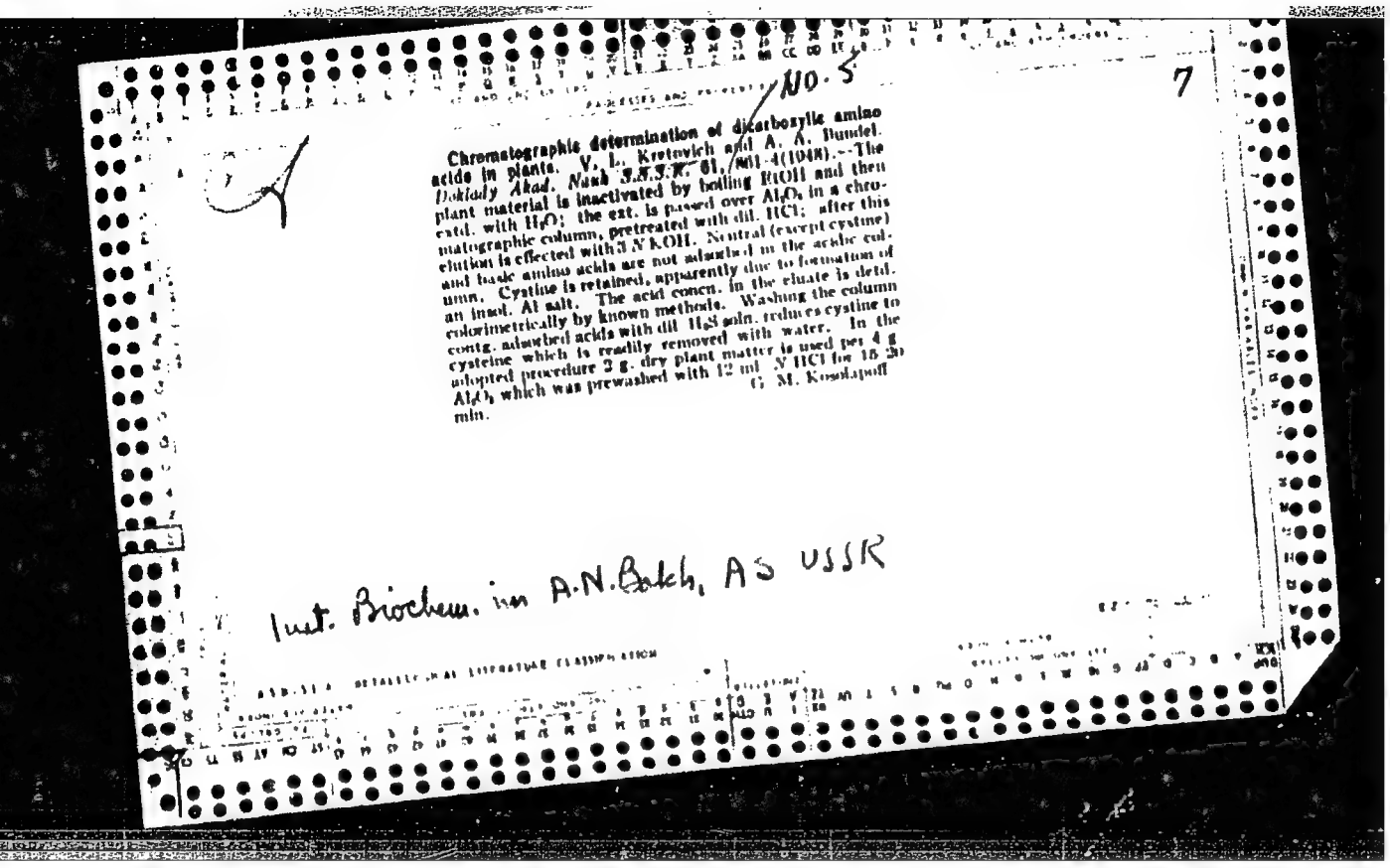
USSR/Medicine - Plants
Medicine - Alanine

"Synthesis of Alanine in Vegetable Tissues," V. L. Kretovich, A. A. Bundel', Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 9

Reports experimental research on the conditions of synthesis of alanine from pyruvate in ground and living tissues of plants. Experiments conducted with lupine and squash, chosen as characteristically representing two types of oxygen exchange in plants. Presents process of experiments and results. Submitted by Academician A. I. Oparin, 24 Jan 1948.

51T45



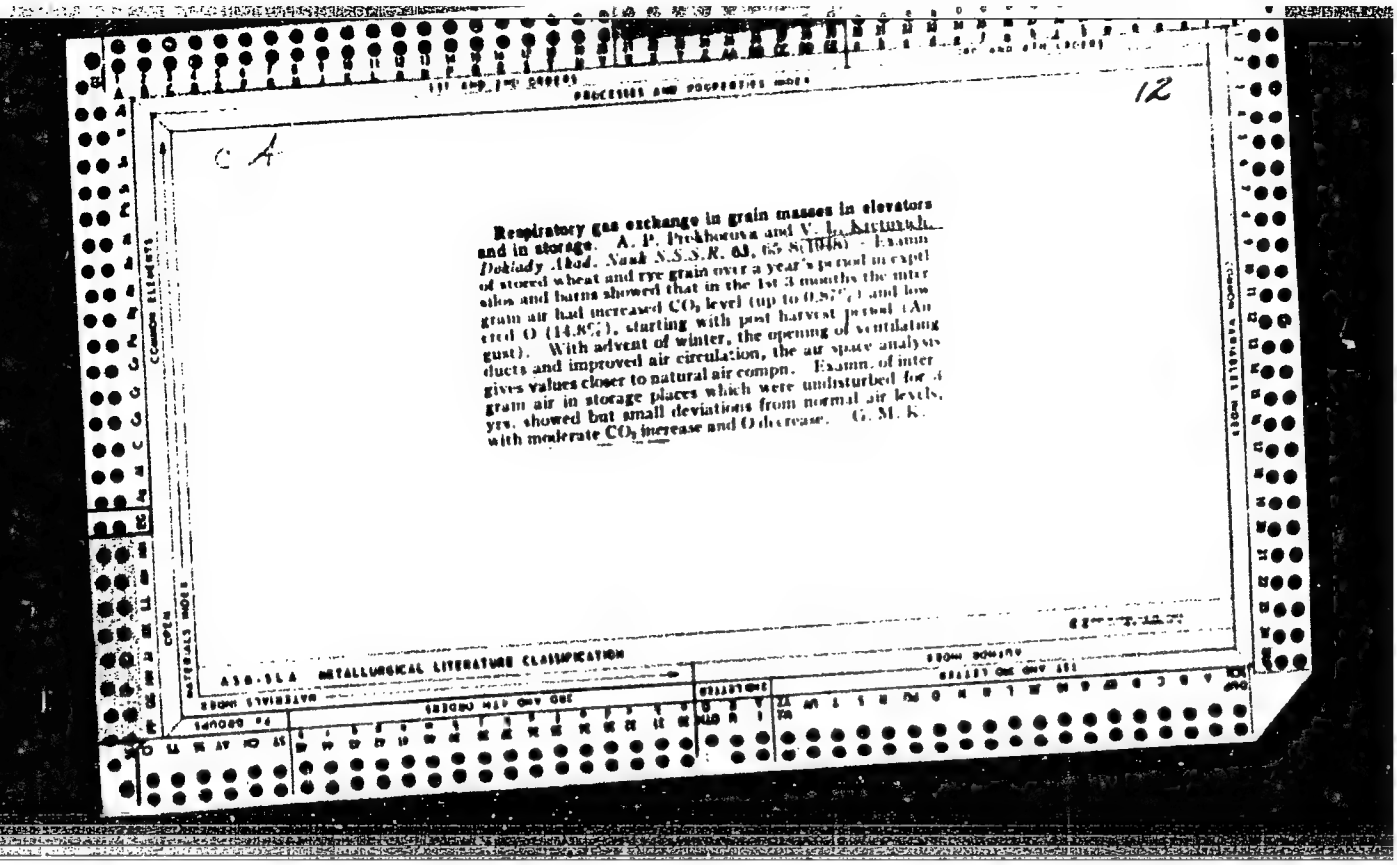
NO. 5

7

Chromatographic determination of dicarboxylic amino acids in plants. V. L. Kretovich and A. A. Bundel. *Doklady Akad. Nauk S.S.S.R.* 61, 901-4(1948).—The plant material is inactivated by boiling EtOH and then extd. with H_2O; the ext. is passed over Al_2O_3 in a chromatographic column, pretreated with dil. HCl; after this elution is effected with 3 *N* KOH. Neutral (except cystine) and basic amino acids are not adsorbed in the acidic column. Cystine is retained, apparently due to formation of an insol. Al salt. The acid concn. in the eluate is detd. colorimetrically by known methods. Washing the column contg. adsorbed acids with dil. H_2S soln. reduces cystine to cysteine which is readily removed with water. In the adopted procedure 2 g. dry plant matter is used per 4 g. Al_2O_3 which was prewashed with 12 ml. *N* HCl for 15-20 min.

G. M. Kosolapoff

Inst. Biochem. im A.N. Bakh, AS USSR

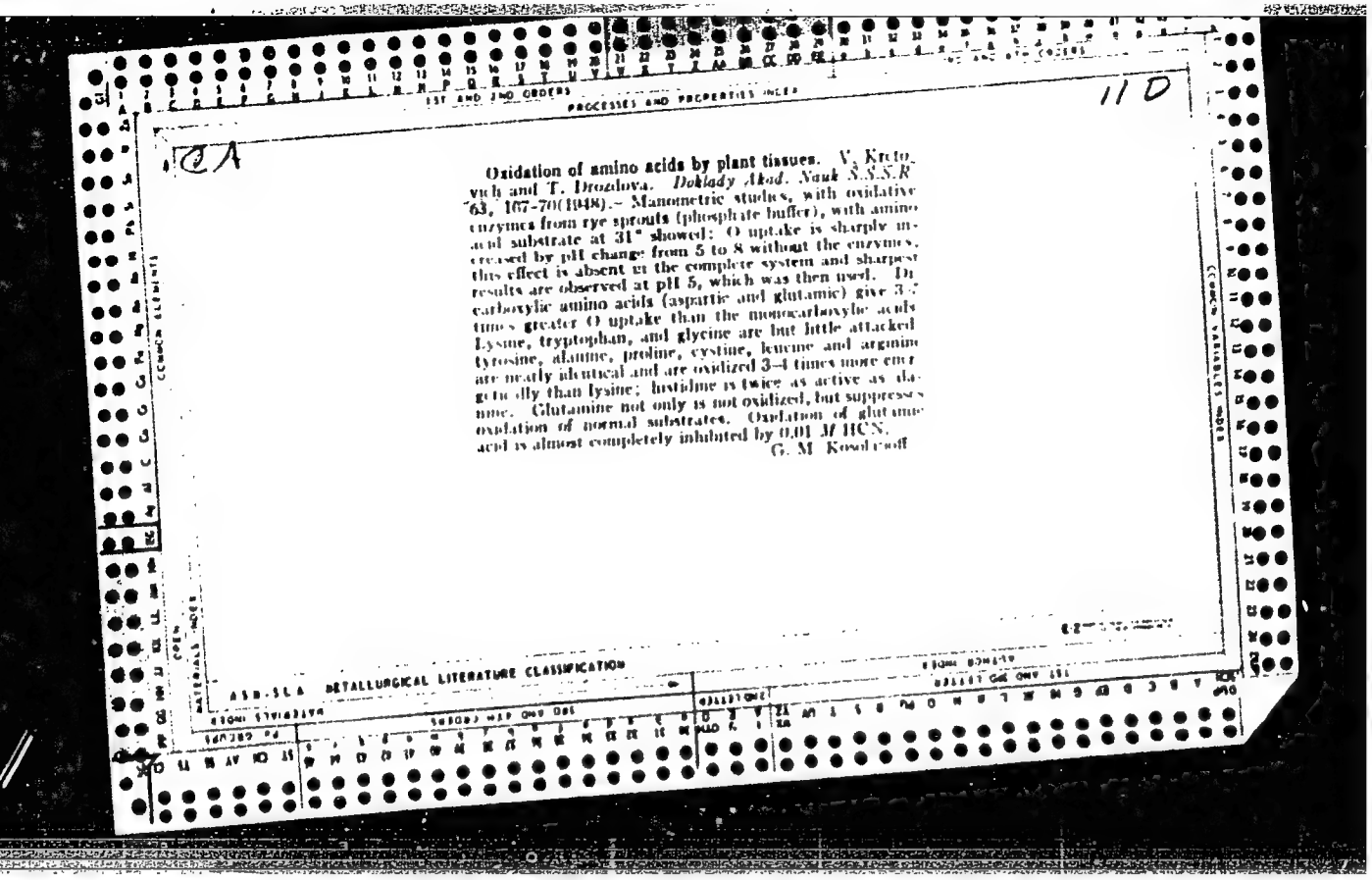


12

C A

Respiratory gas exchange in grain masses in elevators and in storage. A. P. Prokhorova and V. L. Arcturskii. *Doklady Akad. Nauk S.S.S.R.* 63, 65-8(1948). - Examn of stored wheat and rye grain over a year's period in experl silos and barns showed that in the 1st 3 months the inter grain air had increased CO_2 level (up to 0.87%) and low ered O (14.8%), starting with post harvest period (August). With advent of winter, the opening of ventilating ducts and improved air circulation, the air space analysis gives values closer to natural air compn. Examn. of inter grain air in storage places which were undisturbed for 4 yrs. showed but small deviations from normal air levels, with moderate CO_2 increase and O decrease. G. M. K.

A50-51A METALLURGICAL LITERATURE CLASSIFICATION



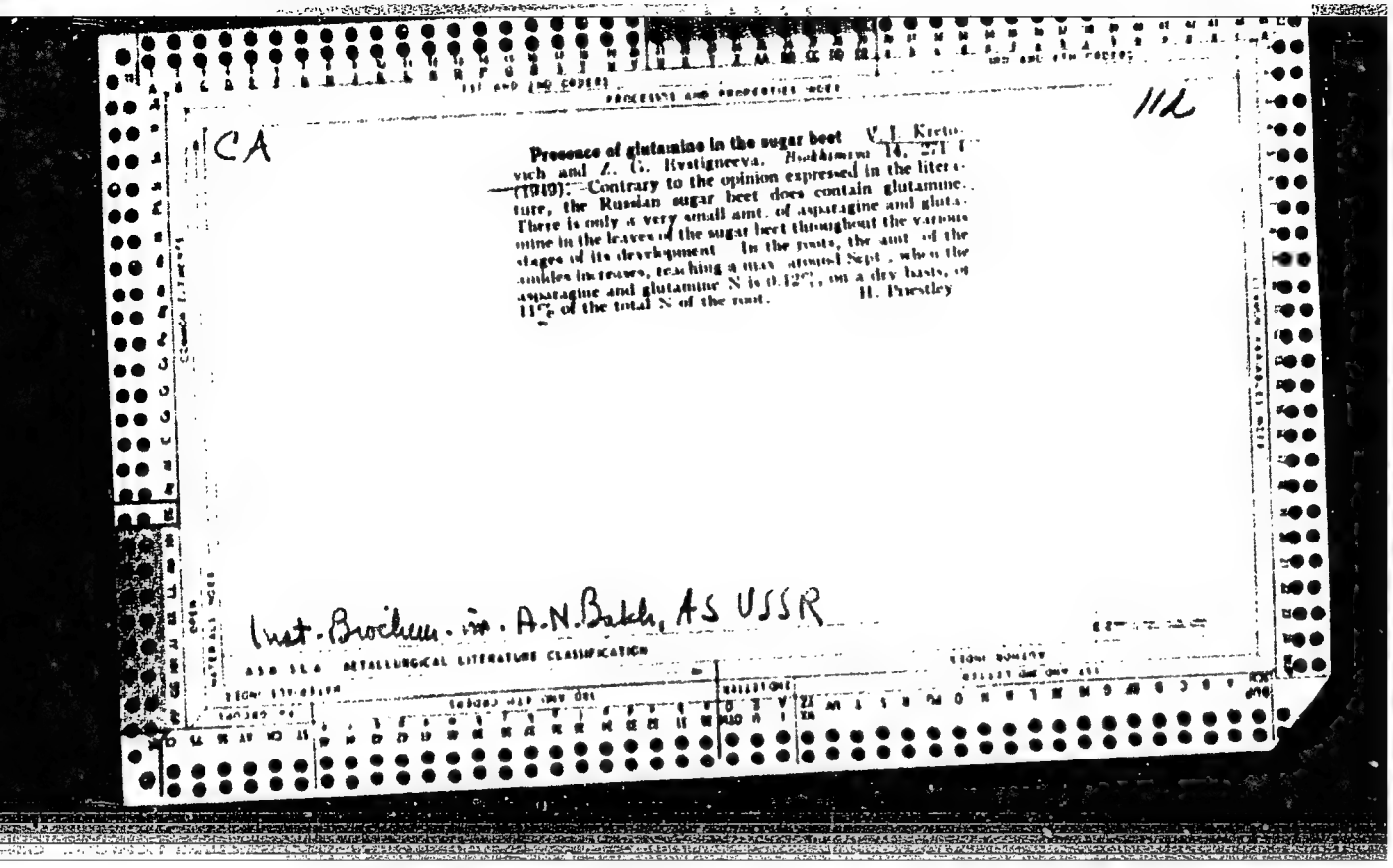
Oxidation of amino acids by plant tissues. V. Krotovich and T. Drozdova. *Doklady Akad. Nauk S.S.S.R.* 63, 167-70(1948).— Manometric studies, with oxidative enzymes from rye sprouts (phosphate buffer), with amino acid substrate at 31° showed: O uptake is sharply increased by pH change from 5 to 8 without the enzymes, this effect is absent in the complete system and sharpest results are observed at pH 5, which was then used. Dicarboxylic amino acids (aspartic and glutamic) give 3-7 times greater O uptake than the monocarboxylic acids. Lysine, tryptophan, and glycine are but little attacked. Tyrosine, alanine, proline, cystine, leucine and arginine are nearly identical and are oxidized 3–4 times more energetically than lysine; histidine is twice as active as alanine. Glutamine not only is not oxidized, but suppresses oxidation of normal substrates. Oxidation of glutamic acid is almost completely inhibited by 0.01 *M* HCN.

G. M. Kosolapoff

KRETOVICH, V. L. i YEVSTIINEYEVA, Z. G.

20014 KRETOVICH, V. L. i YEVSTIINEYEVA, Z. G. O nakhozhdenii glyutamina v sakharnoy svekle. Biokhimiya, 1949, Vyp. 3, s. 271-74. -- Bibliogr: 7 nazv.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.



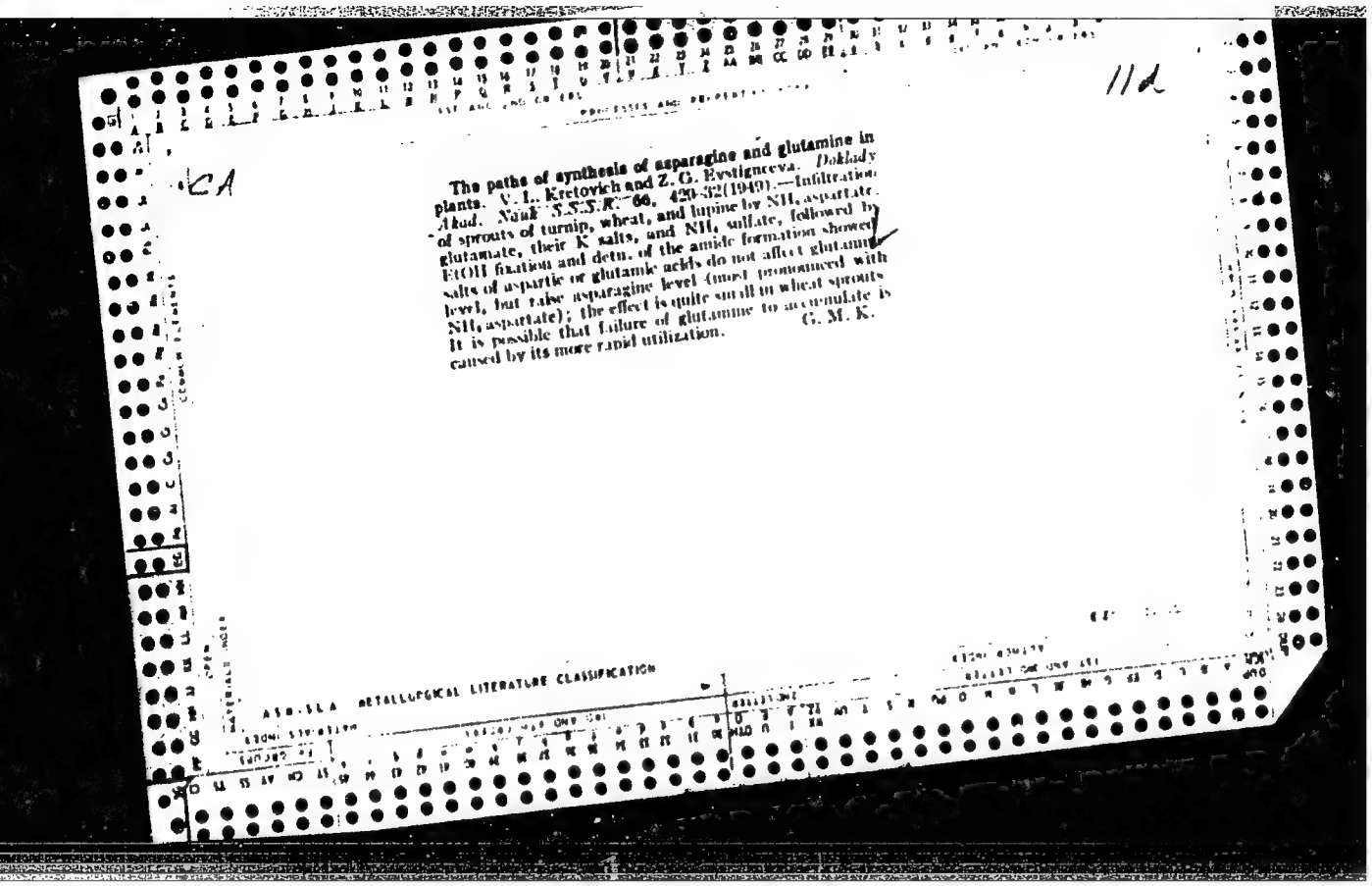
112

CA

Presence of glutamine in the sugar beet V. I. Kretovich and Z. G. Rvatigneeva. *Biokhimiya* 14, 271 (1949): Contrary to the opinion expressed in the literature, the Russian sugar beet does contain glutamine. There is only a very small amt. of asparagine and glutamine in the leaves of the sugar beet throughout the various stages of its development. In the roots, the amt. of the amides increases, reaching a max. around Sept., when the asparagine and glutamine N is 0.12% on a dry basis, or 11% of the total N of the root. H. Priestley

Inst. Biochem. im. A.N. Bakh, AS USSR

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION



112

CA

The paths of synthesis of asparagine and glutamine in plants. V. L. Kretovich and Z. G. Evstigneeva. *Doklady Akad. Nauk S.S.S.R.* 66, 429-32(1949).—Infiltration of sprouts of turnip, wheat, and lupine by NH_4 aspartate, glutamate, their K salts, and NH_4 sulfate, followed by EtOH fixation and detn. of the amide formation showed salts of aspartic or glutamic acids do not affect glutamine level, but raise asparagine level (most pronounced with NH_4 aspartate); the effect is quite small in wheat sprouts. It is possible that failure of glutamine to accumulate is caused by its more rapid utilization. G. M. K.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

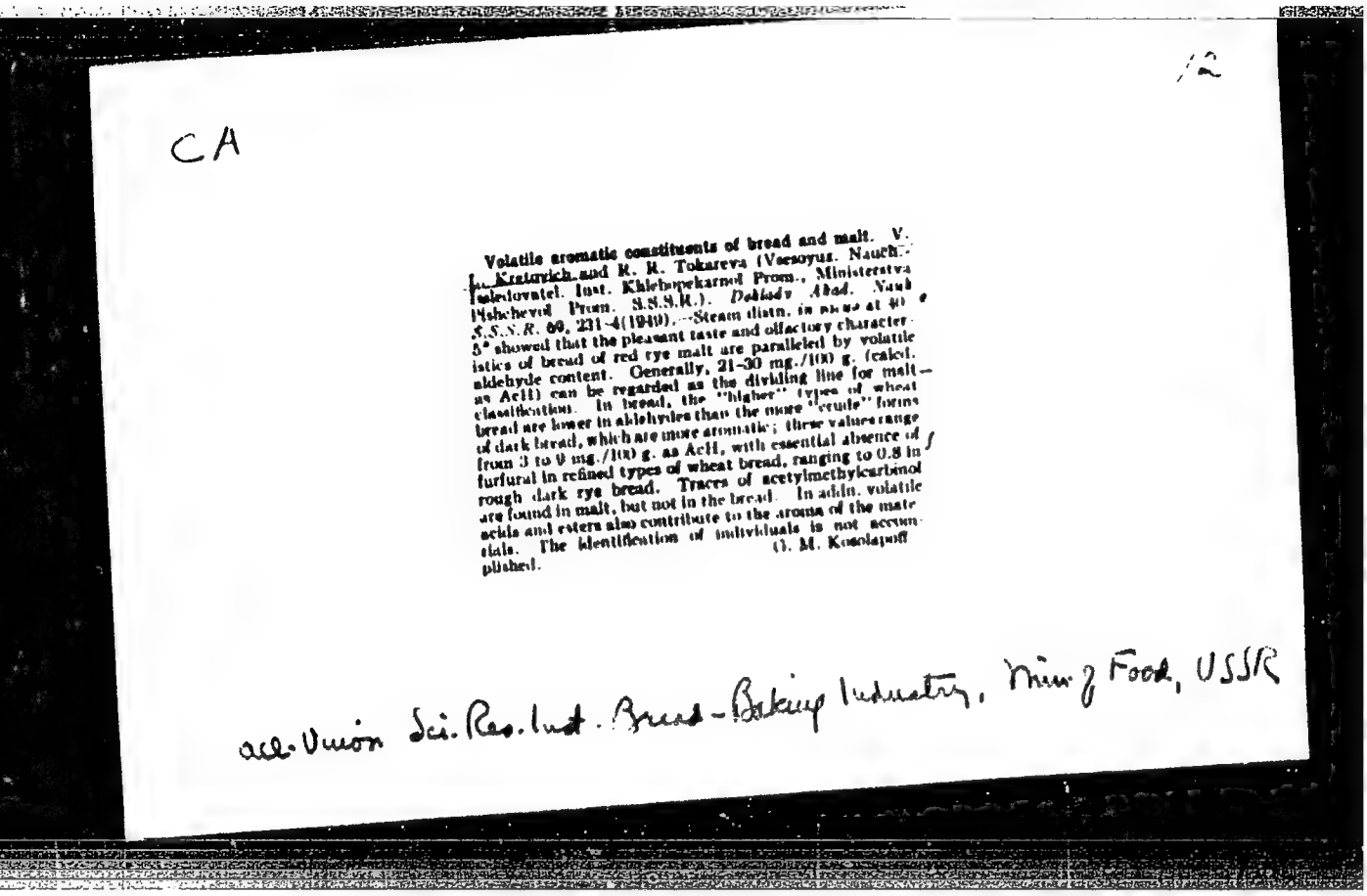
PROCESSES AND PROPERTIES INDEX

10A

11A

Transamination of aspartic and glutamic acids in plants. A. L. Kretovich and A. A. Bundel. *Doklady Akad. Nauk S.S.S.R.* 66, 901-4(1949).—Comparison of intensity of transamination of aspartic and glutamic acids in reaction with pyruvic acid using lupine sprouts (cf. K. and B., C.A. 50, 1305; 1948 for technique used) at pH 8.7 at 37° for 1.5 hrs. incubation showed that glutamic acid is transaminated in the minced tissue much more intensively than aspartic acid (20% excess). Vacuum infiltration method used on corn plants and pea sprouts gave similar results with living plant. Similar infiltration into ripening wheat ears gave even more pronounced differentiation; [illegible] have too slow transamination rate to be significant. G. M. Kosolapoff

METALLURGICAL LITERATURE CLASSIFICATION



12

CA

Volatile aromatic constituents of bread and malt. V. Kretovich and R. R. Tokareva (Vsesoyuz. Nauch.-issledovatel. Inst. Khlebopekarnoi Prom., Ministerstva Mishchevoi Prom. S.S.S.R.). *Doklady Akad. Nauk S.S.S.R.* 69, 231-4(1949).—Steam distn. in vacuo at 40° showed that the pleasant taste and olfactory characteristics of bread of red rye malt are paralleled by volatile aldehyde content. Generally, 21–30 mg./100 g. (calcd. as AcH) can be regarded as the dividing line for malt—classification. In bread, the "higher" types of wheat bread are lower in aldehydes than the more "crude" forms of dark bread, which are more aromatic; these values range from 3 to 9 mg./100 g. as AcH, with essential absence of furfural in refined types of wheat bread, ranging to 0.8 in rough dark rye bread. Traces of acetylmethylcarbinol are found in malt, but not in the bread. In addn. volatile acids and esters also contribute to the aroma of the materials. The identification of individuals is not accomplished. O. M. Kosolapoff

acd. Union Sci. Res. Inst. Bread-Baking Industry, Min. of Food, USSR

CA

12

Dependence of grain respiration on temperature. A. P. Prokhorova and V. L. Kretovich (Research Inst. of Ministry of Material and Agr. Reserves, and A. N. Bakh Biochem. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 69, 401-3(1949).—Optimum respiration temp. for wheat grain is 30–5° and the temp. coeff. (10° interval) varies: for 0–10° it is 5 at 14% moisture content, 22 at 16%, 7.2 at 18%, and 12.0 at 22% moisture; at 10–20° intervals these are 8, 2.9, 6.2, and 3.6; for 20–30° intervals: 2.7, 2.4, 2.7, 2.1; for 30–40°: 2.3, 2.2, 2.2, 2.9; for 40–50°: 2.0, 1.6, 1.7, 1.6, resp. Grain with 14–16% moisture keeps const. respiration rate at 55° for several days, but on long exposures the rate declines, while grains with high moisture level (18–23%) begin to decline even after 6–18 hrs. G. M. Kondratieff

(BA - A III Mr. '58: 395)

KRETOVICH, V. L., jt. au.

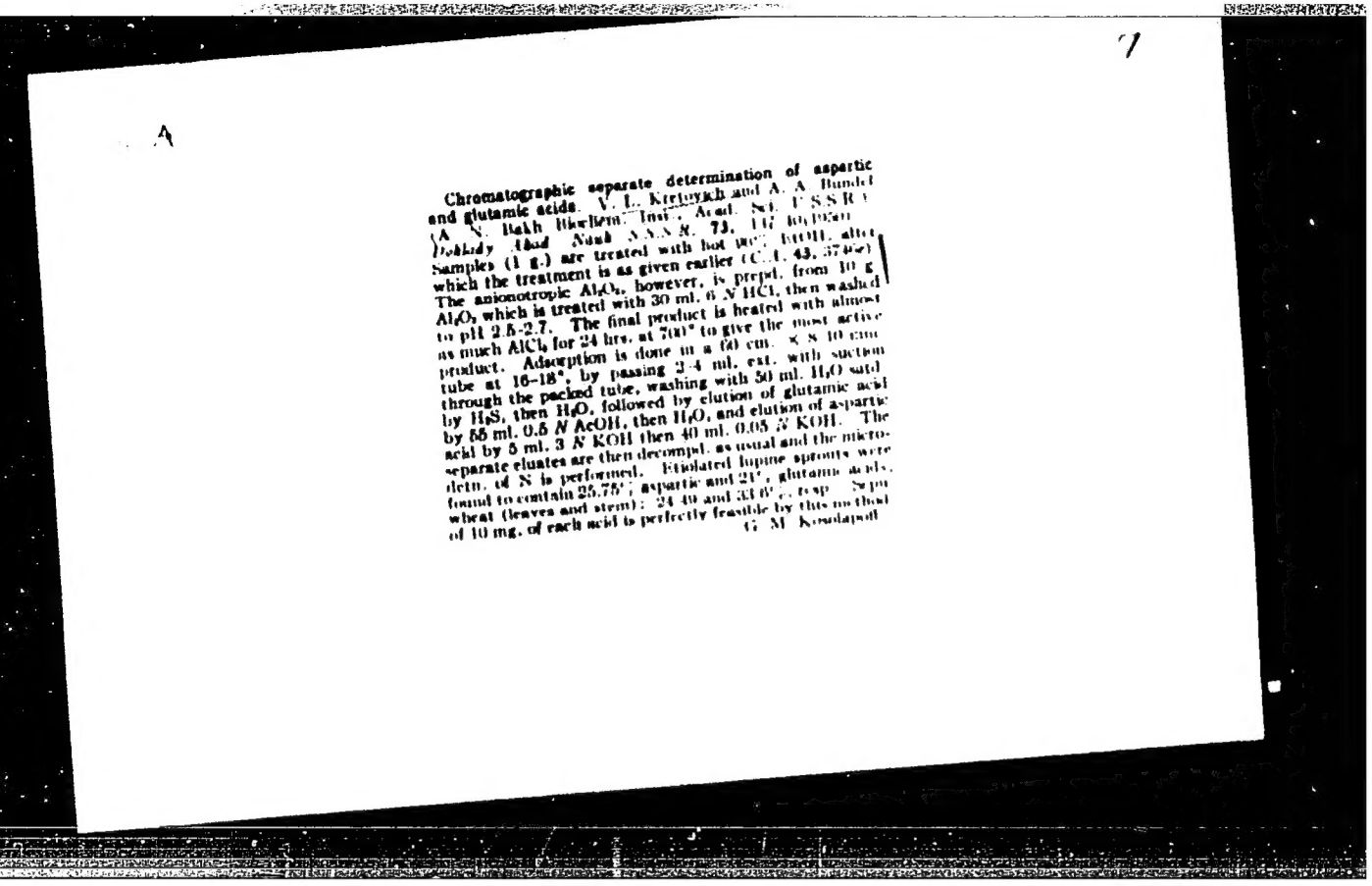
Koz'mina, N. P. Biochemistry of grain and products obtained rom processing it; textbook 4. ispr. i dop. izd. Moskva, Gos. izd-vo tekh, i ekon. Lit-ry po voprosam zagotovok, 1950. 358 p. (55-40820) Biokhimiia zerna...1950 (Card 2, 55-40820)

QK861.k615 1950

KRETOVICH, V.L.

Chem (3)

Determination of aspartic and glutamic acids by the method of chromatographic adsorption. V. L. Kretovich and A. A. Rundel. *Issledovaniya v Oblasti Khromatog., Trudy Vsesoyuz. Soveshchaniya Khromatog., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 192-9(Pub. 1952).—Sepn. of aspartic and glutamic acids on Al_2O_3 is described in detail. The latter is completely eluted by 0.5*N* AcOH, while the former is but slightly shifted downward during such elution. After this sepn. the aspartic acid can be removed by elution with alkali. The analysis consists of washing the adsorbent with 6*N* HCl, followed by H_2O until the pH reaches 2.5–2.7, after which the biol. soln. is sucked through the adsorbent tube, washed with H_2O satd. with H_2S, then plain H_2O, eluted with 0.5*N* AcOH, distd. H_2O, then with 3*N* and finally 0.05*N* KOH. The solns. are collected separately and are used for the usual combustion method of *N* detn., from which the content of the acids is calcd. In young leaves and stems of wheat both aspartic and glutamic acids are present in equal amts. Sepn. of 10 mg. is possible, with an error of about 5%. G. M. K.



Chromatographic separate determination of aspartic and glutamic acids. V. L. Kretovich and A. A. Bundel' (A. N. Bakh Biochem. Inst., Acad. Sci. U.S.S.R.) Doklady Akad. Nauk S.S.S.R. 73, 117-20(1950). Samples (1 g.) are treated with hot 80% EtOH, after which the treatment is as given earlier (C.A. 43, 3746e). The anionotropic Al_2O_3, however, is prepd. from 10 g. Al_2O_3 which is treated with 30 ml. 6 *N* HCl, then washed to pH 2.6-2.7. The final product is heated with almost as much $AlCl_3$ for 24 hrs. at 700° to give the most active product. Adsorption is done in a 60 cm. × 8-10 mm. tube at 16-18°, by passing 2-4 ml. ext. with suction through the packed tube, washing with 50 ml. H_2O satd. by H_2S, then H_2O, followed by elution of glutamic acid by 55 ml. 0.5 *N* AcOH, then H_2O, and elution of aspartic acid by 5 ml. 3 *N* KOH then 40 ml. 0.05 *N* KOH. The separate eluates are then decompd. as usual and the micro-detn. of N is performed. Etiolated lupine sprouts were found to contain 25.7% aspartic and 21% glutamic acids, wheat (leaves and stem): 24.40 and 33.6% resp. Separation of 10 mg. of each acid is perfectly feasible by this method.

G. M. Kondrat'eva